SHEET INDEX

LOCATION PLAN

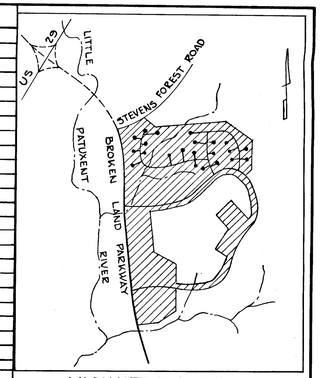
Scale: 1" = 400'

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH.	S.Y.	39,330
2	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	18,115
3	BIT. CONC. BASE COURSE 5" TH.	S.Y.	57,445
4	MOD. COMB. CURB AND GUTTER	L.F.	21,305
5	STD 7" COMB. CURB AND GUTTER	L.F.	24,935
6	BARRIER CURB	L.F.	200
7	PLACING TOPSOIL 6" TH.	S.Y.	
8	UNCLASSIFIED EXCAVATION (ROADWAY)	C.Y.	109,780
9	CONC. SIDEWALK 4" TH.	L.F.	36,795
10	15" CL. IV RCP	L.F.	4,172
11	18" CL. IV RCP	L.F.	1,538
12	21" CL. IV RCP	L.F.	738
13	24" CL. IV RCP	L.F.	1,378
14	27" CL. IV RCP	L.F.	1,272
15	30" CL. IV RCP	L.F.	895
16	33" CL. IV RCP	L.F.	1,257
17	36" CL. IV RCP	L.F.	247
18	42" CL. IV RCP	L.F.	114
19	48" CL. IV RCP	L.F.	150
20	54" CL. IV RCP	L.F.	31
21	15" [illegible] CMP 16 Ga.	L.F.	28
22	18" [illegible] CMP 16 Ga.	L.F.	86
23	24" [illegible] CMP 14 Ga.	L.F.	218
24	36" [illegible] CMP [illegible] Ga.	L.F.	60

* Includes stripping in fills (1' depth assumed)

50	36" CMP 12 Ga. (Sediment Pond)	L.F.	157
51	48" CMP 12 Ga. (Sediment Pond)	L.F.	15



VICINITY MAP

Scale: 1" =

GENERAL NOTES

1. All work shall be performed in accordance with the Howard County Road Construction Code and Standard Specifications.
2. All utility companies shall be notified 24 hours in advance of construction.
3. Primary residential streets are designed for 35 M.P.H. traffic speed. Secondary residential streets are designed for 30 M.P.H. traffic speed in accordance with AASHO standards.
4. Brick bulkhead shall be installed in all storm drain stubs.
5. All inlets shall be Howard County standards unless otherwise shown.
6. All street curb returns shall have 35.5' radii unless otherwise noted.
7. Storm drain trenches within road rights-of-way shall be backfilled and compacted in accordance with Howard County Road Code.
8. Approximate location of existing utilities are shown. The Contractor shall take all necessary precaution to protect the existing utilities and to maintain uninterrupted service. Any damage incurred due to contractor's operations shall be repaired immediately at the contractors expense.
9. The contractor shall test pit existing utilities, where directed by the Engineer, a minimum of Two weeks in advance of construction operations.
10. Temporary, compacted, 18" high, Earth filled Diversion Berms should be constructed above the lips of Fill Slopes on the R-O-W concurrently with the initial grading and directed to undisturbed sod areas at the end of each day.
11. All swales shall be sodded and tamped, and all slopes shall be seeded or sodded in conjunction with the Howard County Soil Conservation District and the Howard County Planning Board Standards entitled "Standards and Specifications For Soil Erosion and Sediment Control in Urbanizing Areas."
12. Contractor to notify the Howard County Soil Conservation District at least three days before starting work shown on these drawings.
13. All Disturbed slope areas to be stabilized as soon as grading is completed.
14. On all fills in sump areas, Reliance Plastic & Chemical Company "Flexible Tube Down Drains and Pans", or approved equal, shall be used.
15. All Reinf. Conc. for storm drain structures shall have min. 28 day strength of 3500 psi

BENCH MARKS

Bench Mark W-700 Elev. 381.45
Iron Pipe 85'± right of ℄ Station 1+75 Tawny Bloom

Bench Mark W-713 Elev. 398.69
Iron Pipe 98'± right of ℄ Station 5+90 Sandchain Road

Bench Mark W-721 Elev. 377.54
Iron Pipe 172'± right of ℄ Station 11+55 Windharp Way

Bench Mark W-730 Elev. 350.74
Iron Pipe 238'± right of ℄ Station 53+85 Cradlerock Way

Bench Mark W-755 Elev. 305.13
Iron Pipe 160'± left of ℄ Station 83+60 Cradlerock Way

Bench Mark W-761 Elev. 293.63
Iron Pipe 180'± right of ℄ Station 99+45 Cradlerock Way

Bench Mark W-773 Elev. 330.92
Iron Pipe 75'± left of ℄ Station 3+32 Leafy Screen

Bench Mark W-778 Elev. 344.82
Iron Pipe 90'± right of ℄ Station 2+45 Setting Star

Bench Mark W-785 Elev. 351.79
Iron Pipe 195'± right of ℄ Station 17+00 Cradlerock Way

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
25	15" CL III RCP	L.F.	2711
26	18" CL III RCP	L.F.	471
27	21" CL III RCP	L.F.	227
28	24" CL III RCP	L.F.	10
29	33" CL III RCP	L.F.	44
30	9'-5" x 6'-7" SSPA	L.F.	182
31	STD A-5 INLET	EA.	65
32	STD A-10 INLET	EA.	34
33	STD C INLET	EA.	12
34	SPECIAL A-5 INLET	EA.	1
35	SPECIAL INLET	EA.	1
36	STD MANHOLE	EA.	17
37	STD B MANHOLE	EA.	9
38	STD TYPE A HEADWALL	EA.	6
39	STD TYPE C ENDWALL	EA.	5
40	SPECIAL HEADWALL	EA.	5
41	SPECIAL ENDWALL	EA.	4
42	SPECIAL MANHOLE	EA.	2
43	JUNCTION CHAMBER	EA.	1
44	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	2063
45	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	1806
46	SOD DRAINAGE DITCHES	S.Y.	1618
47	RIP-RAP PAVING	S.Y.	353
48	MASONARY WALL	C.Y.	40
49	BRIDGE	EA.	1

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

DEPARTMENT OF PUBLIC WORKS

D. H. Richmond 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

D. H. Clawson 5/26/72
CHIEF, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

OWNER AND DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORP.

COLUMBIA, MARYLAND

CERTIFICATION BY THE DEVELOPER

"I certify that all development and/or construction will be done according to this plan of development and plan of silt and sediment control."

Richard W. Goodman 5-23-72
Signature Date

"This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District."

Reviewed James M. Hale 5-23-72
Dist. Conservationist Date

Approved Richard W. Goodman 5-23-72
Howard Soil Conservation District Date

SECTION 1 AREA 1

COLUMBIA

VILLAGE OF OWEN BROWN

HOWARD COUNTY, MARYLAND

6TH ELECTION DISTRICT

Date: 5/25/72 Scale: As Shown

W.O. 6536-2B
#61

SHEET 1 OF 53

F-72-85C

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 21202	
Kenneth A. McCord KENNETH A. McCORD Registered Engineer No. 1974	STATE OF MARYLAND KENNETH ARMSTRONG McCORD No. 1974 REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR

DEPARTMENT OF PUBLIC WORKS

[illegible] 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT DATE
AND TRANSPORTATION PLANNING

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION I, AREA I

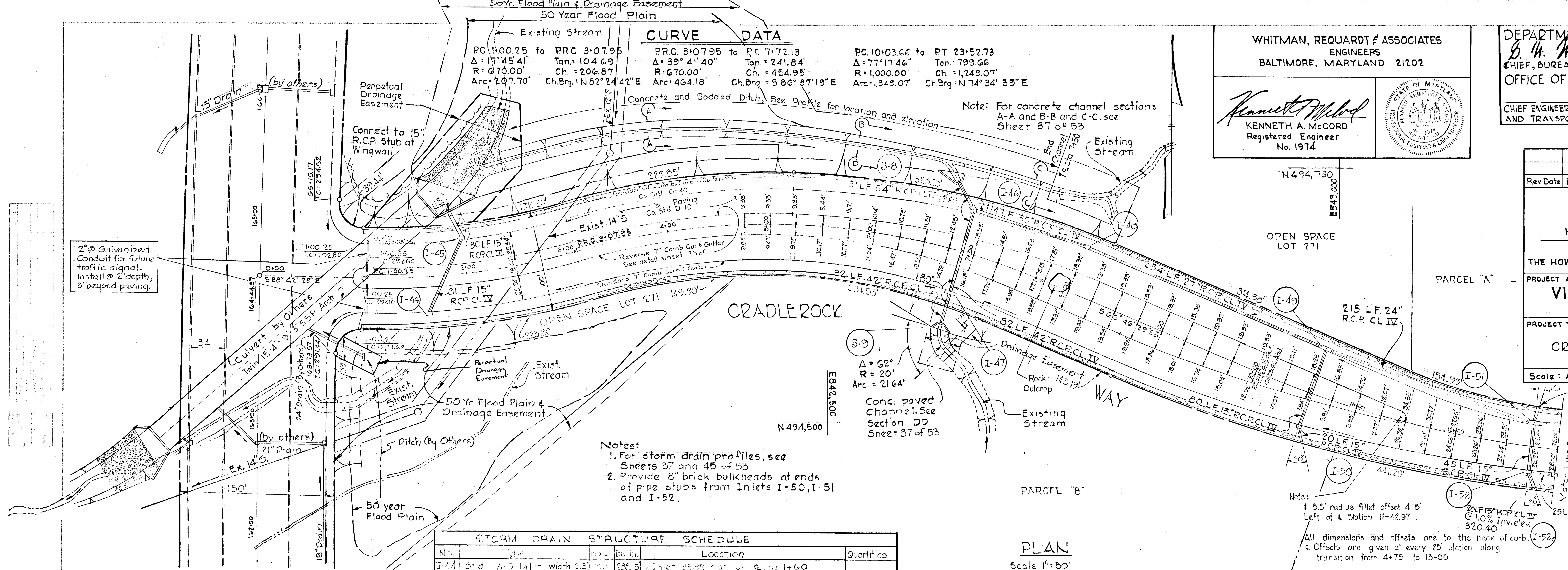
PROJECT TITLE
PLAN & PROFILE
CRADLEROCK WAY Sta. 0+00 to 13+00

Scale : As Shown Date :

CURVE DATA

P.C. 1+00.25 to P.R.C. 3+07.95 Δ = 17° 45' 41" R = 670.00' Arc = 207.70' Tan. = 104.69' Ch. = 206.87' Ch. Brg. = N 82° 24' 42" E	P.R.C. 3+07.95 to P.T. 7+72.13 Δ = 39° 41' 40" R = 670.00' Arc = 464.18' Tan. = 241.84' Ch. = 454.95' Ch. Brg. = S 86° 37' 19" E	P.C. 10+03.66 to P.T. 23+52.73 Δ = 77° 17' 46" R = 1,000.00' Arc = 1,349.07' Tan. = 799.66 Ch. = 1,249.07' Ch. Brg. = N 74° 34' 39" E

Note: For concrete channel sections A-A and B-B and C-C, see Sheet 37 of 53



Notes:
1. For storm drain profiles, see Sheets 37 and 45 of 53
2. Provide 8" brick bulkheads at ends of pipe stubs from Inlets I-50, I-51 and I-52.

Note:
℄ 5.5' radius fillet offset 4.18' Left of ℄ Station 11+42.97.

All dimensions and offsets are to the back of curb.
℄ Offsets are given at every 25' station along transition from 4+75 to 13+00

PLAN
Scale 1" = 50'

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 2?

[illegible]
HOWARD RESEARCH AND DEVELOPMENT CORP

STORM DRAIN STRUCTURE SCHEDULE

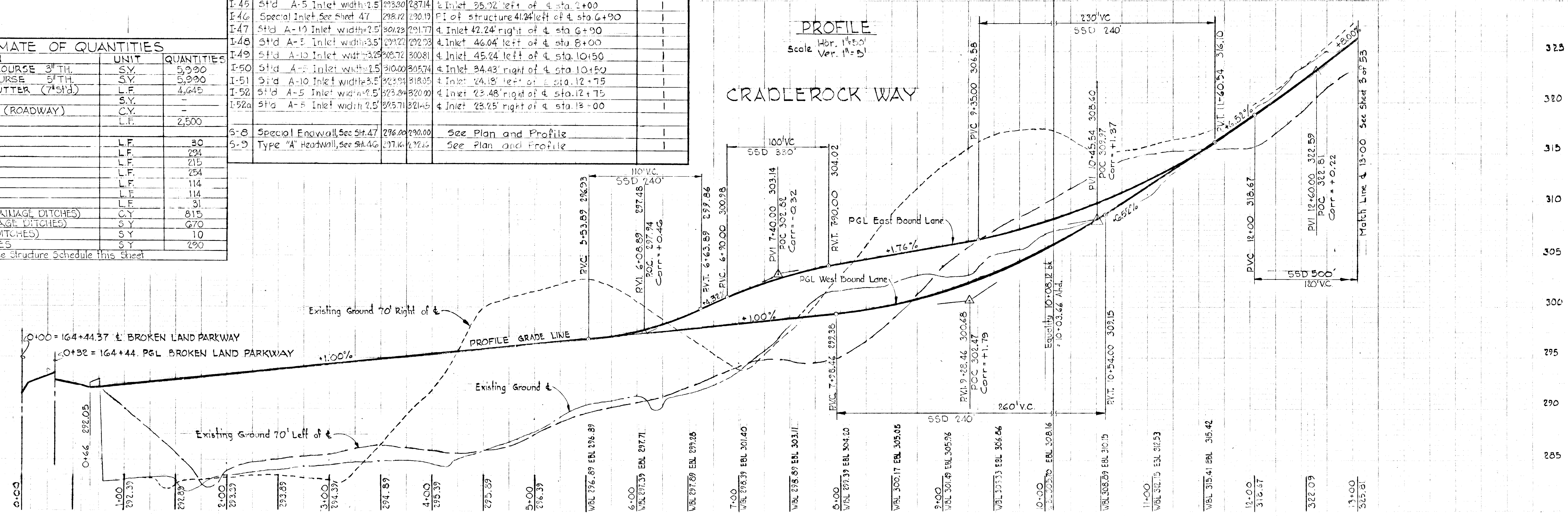
No.	Type	Top El.	Inv. El.	Location	Quantities
I-44	St'd A-5 Inlet width 2.5'	[illegible]	288.15	℄ Inlet 35.92' right of ℄ sta. 1+60	1
I-45	St'd A-5 Inlet width 2.5'	293.30	287.14	℄ Inlet 35.92' left of ℄ sta. 2+00	1
I-46	Special Inlet, See Sheet 47	298.12	290.19	PI of structure 41.24' left of ℄ sta. 6+90	1
I-47	St'd A-10 Inlet width = 2.5'	301.23	291.77	℄ Inlet 42.24' right of ℄ sta 6+90	1
I-48	St'd A-5 Inlet width = 3.5'	299.22	292.93	℄ Inlet 46.04' left of ℄ sta. 8+00	1
I-49	St'd A-10 Inlet width = 3.25'	308.72	300.81	℄ Inlet 45.24' left of ℄ sta. 10+50	1
I-50	St'd A-5 Inlet width = 2.5'	310.00	305.74	℄ Inlet 34.43' right of ℄ sta 10+50	1
I-51	St'd A-10 Inlet width = 3.5'	323.94	318.05	℄ Inlet 24.18' left of ℄ sta. 12+75	1
I-52	St'd A-5 Inlet width = 2.5'	323.84	320.00	℄ Inlet 23.48' right of ℄ sta. 12+75	1
I-52a	St'd A-5 Inlet width 2.5'	325.71	321.45	℄ Inlet 23.25' right of ℄ sta. 13+00	1
S-8	Special Endwall, See Sht. 47	296.00	290.00	See Plan and Profile	1
S-9	Type "A" Headwall, See Sht. 46	297.16	292.16	See Plan and Profile	1

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	5,990
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	5,990
3	COMB. CURB AND GUTTER (7" St'd.)	L.F.	4,645
4	PLACING TOPSOIL	S.Y.	-
5	EARTH EXCAVATION (ROADWAY)	C.Y.	-
6	CONC. SIDEWALK	L.F.	2,500
7	15" CL III RCP	L.F.	30
8	15" CL IV RCP	L.F.	294
9	24" CL IV RCP	L.F.	215
10	27" CL IV RCP	L.F.	254
11	30" CL IV RCP	L.F.	114
12	42" CL IV RCP	L.F.	114
13	54" CL IV RCP	L.F.	31
14	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	815
15	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	670
16	RIP RAP (DRAINAGE DITCHES)	S.Y.	10
17	SOD DRAINAGE DITCHES	S.Y.	290
For Storm Drain Structures see Structure Schedule this Sheet			

PROFILE
Scale Hor. 1" = 50' Ver. 1" = 5'

CRADLEROCK WAY



WO 6536-2B
#61

5/25/72

F-72-85C

CURVE DATA

PC 10+03.66 to P.T. 23+52.73
Δ = 77° 17' 46" Tan. = 799.66'
R = 1,000.00' Ch. = 1249.07'
Arc = 1,349.07' Ch. Brg = N 74° 34' 39" E

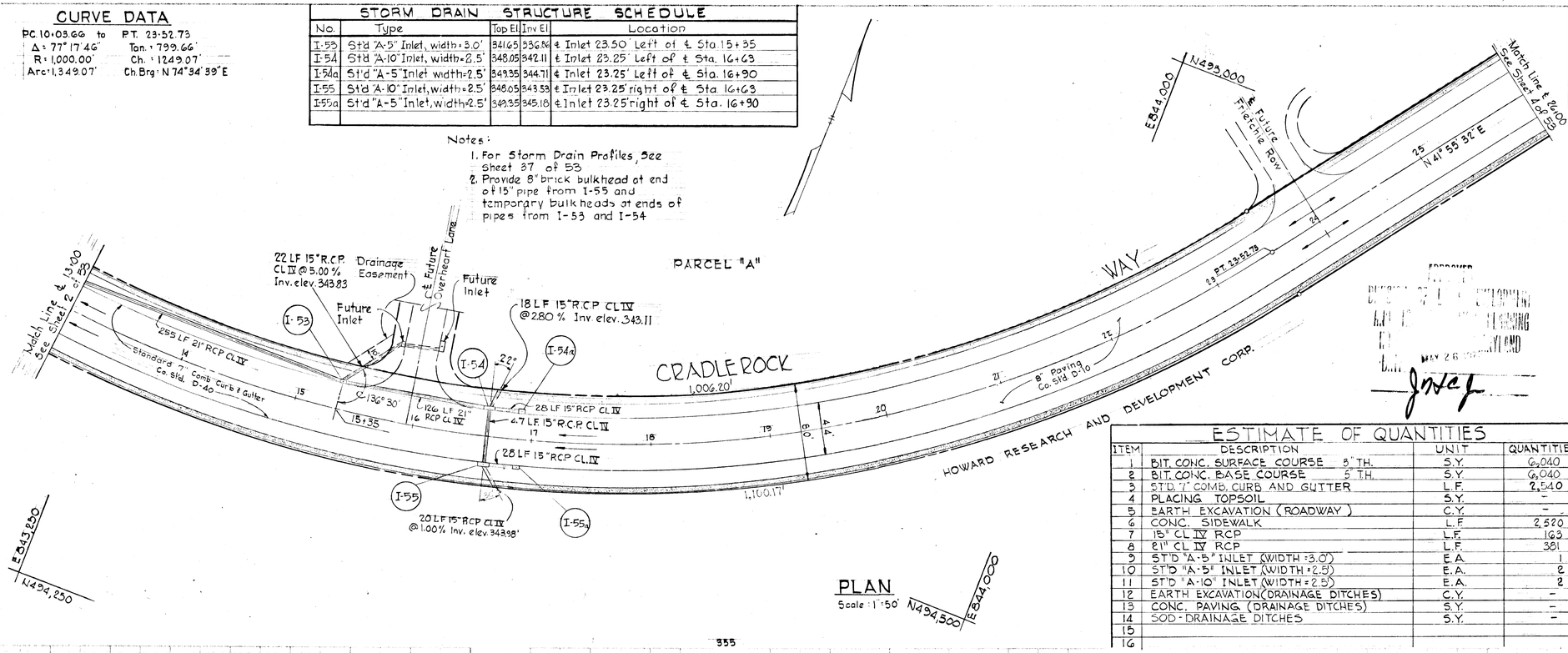
STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top El	Inv El	Location
I-53	Std 'A-5" Inlet, width = 3.0'	341.65	336.84	℄ Inlet 23.50' Left of ℄ Sta. 15+35
I-54	Std 'A-10" Inlet, width = 2.5'	348.05	342.11	℄ Inlet 23.25' Left of ℄ Sta. 16+63
I-54a	Std 'A-5" Inlet width = 2.5'	349.35	344.71	℄ Inlet 23.25' Left of ℄ Sta. 16+90
I-55	Std 'A-10" Inlet, width = 2.5'	348.05	343.53	℄ Inlet 23.25' right of ℄ Sta. 16+63
I-55a	Std "A-5" Inlet, width = 2.5'	349.35	345.18	℄ Inlet 23.25' right of ℄ Sta. 16+90

Notes:
1. For Storm Drain Profiles, See Sheet 37 of 53
2. Provide 8" brick bulkhead at end of 15" pipe from I-55 and temporary bulk heads at ends of pipes from I-53 and I-54

DEPARTMENT OF PUBLIC WORKS
L. H. Nichols 5/20/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE



PLAN
Scale: 1" = 50'

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	6,040
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	6,040
3	STD. "7" COMB. CURB AND GUTTER	L.F.	2,540
4	PLACING TOPSOIL	S.Y.	-
5	EARTH EXCAVATION (ROADWAY)	C.Y.	-
6	CONC. SIDEWALK	L.F.	2,520
7	15" CL IV RCP	L.F.	163
8	21" CL IV RCP	L.F.	381
9	ST'D "A-5" INLET (WIDTH = 3.0')	E.A.	1
10	ST'D "A-5" INLET (WIDTH = 2.5')	E.A.	2
11	ST'D "A-10" INLET (WIDTH = 2.5')	E.A.	2
12	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	-
13	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	-
14	SOD - DRAINAGE DITCHES	S.Y.	-
15			
16			

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

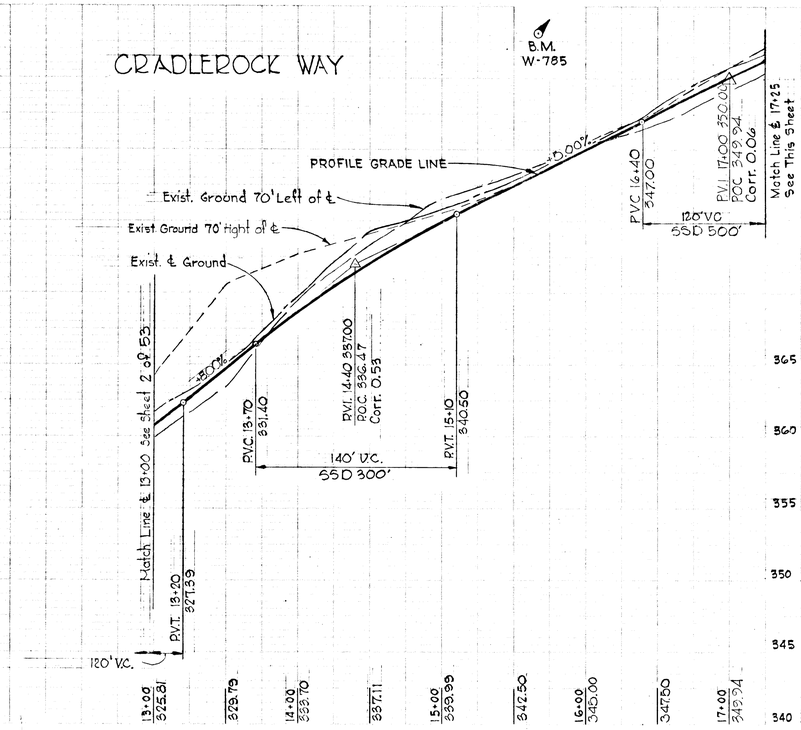
PROJECT TITLE
PLAN AND PROFILE
CRADLEROCK WAY Sta. 13+00 to 26+00

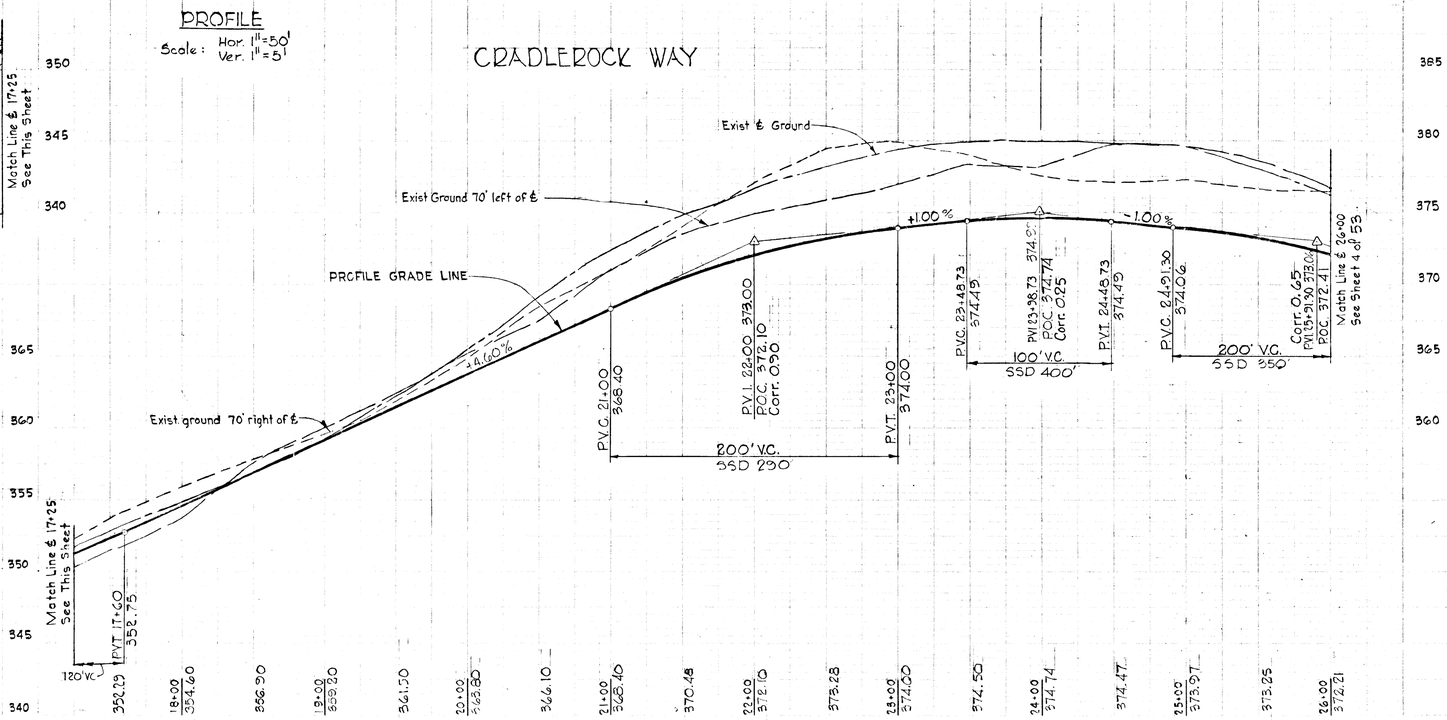
SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

PROFILE
Scale: Hor. 1" = 50'
Ver. 1" = 5'





WO 6536-2B
#61

5/25/72

SHEET 3 OF 53

F-72-85C

CURVE DATA

P.C. 30+56.33 to ℄ Int. 32+83.44
Δ=21° 41' 14"
R=600.00'
Arc.=227.11'
Tan=114.93'
Ch.=225.76'
Ch. Brg.=N46°46'23"E

℄ Int. 32+83.44 to ℄ Int. 37+68.59
Δ=46° 19' 44"
R=600.00'
Arc.=485.15'
Tan=256.72'
Ch.=472.05'
Ch. Brg. N80°46'52"E

℄ Int. 37+68.59 to P.T. 41+99.48
Δ=41°08'48"
R=600.00'
Arc.=430.89'
Tan 225.21'
Ch. 421.69'
Ch. Brg. S 55°28'58"E

NOTE:
1. For storm drain profiles, See Sheets 39 and 40 of 53

DEPARTMENT OF PUBLIC WORKS
D. M. Mckenna 5/30/72
CHIEF BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

MAY 26 1972

Rev Date	Rev No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

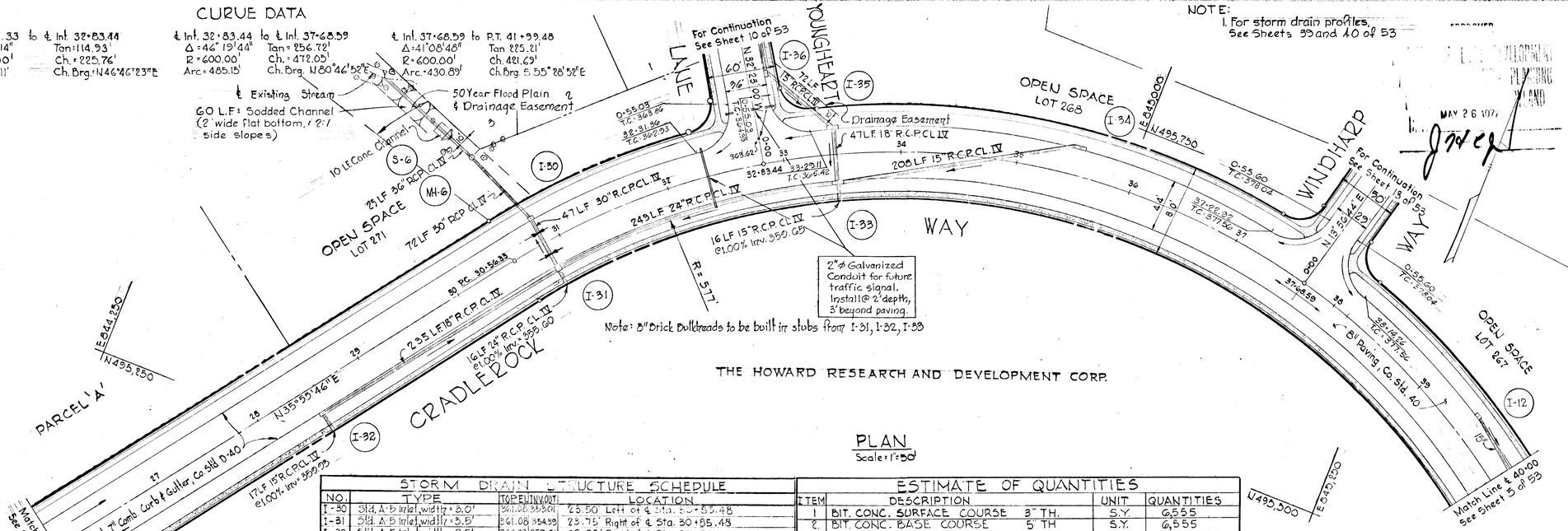
PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
CRADLEROCK WAY Sta. 26+00 to 40+00

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND
21202

KENNETH A. McCORD
Registered Engineer
No. 1974



PLAN
Scale: 1"=50'

STORM DRAIN STRUCTURE SCHEDULE

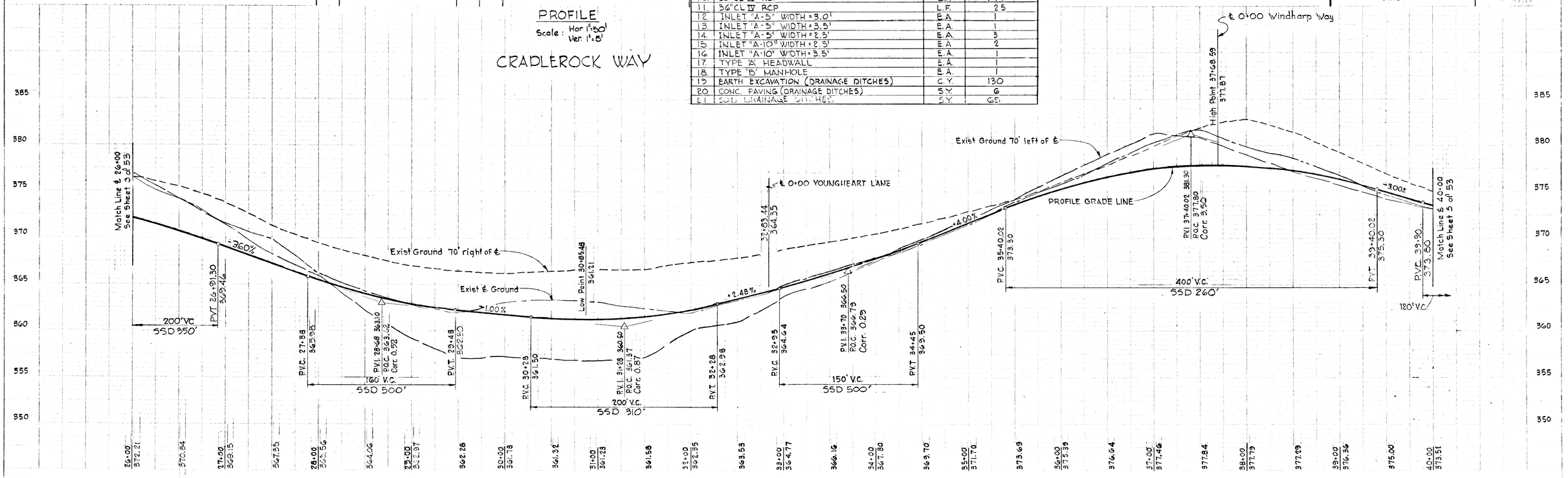
NO.	TYPE	TOP ELEV. IN	INV. OUT	LOCATION
I-30	Std. A-5 Inlet, width = 3.0'	361.08	359.01	23.50' Left of ℄ Sta. 30+85.48
I-31	Std. A-5 Inlet, width = 3.5'	361.08	359.39	23.75' Right of ℄ Sta. 30+85.48
I-32	Std. A-5 Inlet, width = 2.5'	362.33	359.51	23.25' Right of ℄ Sta. 28+50
I-33	Std. A-10 Inlet, width = 3.5'	365.85	358.32	23.75' Right of ℄ Sta. 33+44
I-34	Std. A-10 Inlet, width = 2.5'	373.56	369.47	23.25' Left of ℄ Sta. 35+50
I-35	Std. A-10 Inlet, width = 2.5'	365.85	359.52	23.25' Left of ℄ Sta. 33+44
I-36	Std. A-5 Inlet, width = 2.5'	364.83	360.20	15.92' Right of ℄ Sta. 0+75
S-6	Type 'A' Headwall, See Sheet 46	350.17	345.67	See Plan & Profile
MH-6	Type 'B' Manhole, See Sheet 46	354.00	345.80	See Plan & Profile
I-12	Std. A-5 Inlet, width = 2.5'	374.87	370.09	23.25' Left of ℄ Sta. 39+50

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	6,555
2	BIT. CONC. BASE COURSE 5" TH	S.Y.	6,555
3	ST'D. 7" COMB. CURB & GUTTER	L.F.	2,820
4	PLACING TOPSOIL	C.Y.	-
5	EARTH EXCAVATION (ROADWAY)	C.Y.	-
6	CONC. SIDEWALK	S.Y.	2,720
7	15" CL IV RCP	L.F.	313
8	18" CL IV RCP	L.F.	282
9	24" CL IV RCP	L.F.	265
10	30" CL IV RCP	L.F.	119
11	36" CL IV RCP	L.F.	25
12	INLET "A-5" WIDTH = 3.0'	E.A.	1
13	INLET "A-5" WIDTH = 3.5'	E.A.	1
14	INLET "A-5" WIDTH = 2.5'	E.A.	3
15	INLET "A-10" WIDTH = 2.5'	E.A.	2
16	INLET "A-10" WIDTH = 3.5'	E.A.	1
17	TYPE 'A' HEADWALL	E.A.	1
18	TYPE 'B' MANHOLE	E.A.	1
19	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	130
20	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	6
21	SOD DRAINAGE DITCHES	S.Y.	65

PROFILE
Scale: Hor 1"=50'
Ver. 1"=5'

CRADLEROCK WAY



W.O. G536-2B
#61

5/25/72

SHEET 4 OF 53

F-72-85C

STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top El.	Inv Out	Location
I-3	Std. 'A-5' Inlet, width = 4.5'	347.61	341.70	℄ Inlet 24.25' left ℄ Sta. 52+00
I-4	Std. 'A-10' Inlet, width = 4.0'	352.57	346.32	℄ Inlet 24.00' left ℄ Sta. 50+00
I-5	Std. 'A-10' Inlet, width = 2.5'	352.57	348.45	℄ Inlet 23.25' right ℄ Sta. 50+00
I-6	Std. 'A-5' Inlet, width = 3.5'	359.17	353.87	℄ Inlet 23.75' left ℄ Sta. 47+00
I-7	Std. 'A-5' Inlet, width = 2.5'	359.17	355.17	℄ Inlet 23.25' right ℄ Sta. 47+00
I-8	Std. 'A-10' Inlet, width = 3.5'	364.87	359.80	℄ Inlet 23.75' left ℄ Sta. 44+00
I-9	Std. 'A-10' Inlet, width = 2.5'	364.87	360.83	℄ Inlet 23.25' right ℄ Sta. 44+00
I-10	Std. 'A-5' Inlet, width = 2.5'	370.88	366.36	℄ Inlet 23.25' left ℄ Sta. 41+00
I-11	Std. 'A-5' Inlet, width = 2.5'	370.88	366.89	℄ Inlet 23.25' right ℄ Sta. 41+00

CURVE DATA

℄ Int. 37+68.59 to P.T. 41+99.48
Δ = 41°08'48"
R = 600.00'
Arc = 430.89'
Tan = 225.21'
Ch. = 421.69'
Ch. Brg = S 55° 28' 52" E

P.C. 46+44.62 to P.T. 55+83.31
Δ = 76°50'00"
R = 700.00'
Arc = 938.69'
Tan = 555.15'
Ch. = 869.93'
Ch. Brg = S 03° 30' 32" W

NOTE:
1. For storm drain profiles, See sheet 39 of 53
2. 8" Brick Bulkheads to be built in stubs from Inlets I-3 through I-9.

E 846.000
N 495.000
E 845.750
N 495.500

Existing Irvin Dasher Driveway (Paved)

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE IRVIN DASHER DRIVEWAY DURING THE PERIOD OF CONSTRUCTION

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972

HOWARD RESEARCH AND DEVELOPMENT CORP.

CRADLE ROCK WAY

I-6 1 G.L.F. 18"ℓ C.P. CL. IV @ 1.00% Inv. = 355.05
I-8 1 G.L.F. 18"ℓ C.P. CL. IV @ 1.00% Inv. = 350.46
303 L.F. 18" R.C.P. CL. IV
302 L.F. 24"ℓ C.P. CL. IV
P.C. 46+44.62
P.T. 41+99.48
S 47 L.F. 15" R.C.P. CL. IV S 34° 54' 28" E
347 L.F. 15" R.C.P. CL. IV
8" Paving, Co. Std. D-10
Std. 7" Comb. Curb & Gutter, Co. Std. D-40
I-7 17 L.F. 15"ℓ C.P. CL. IV @ 1.00% Inv. = 355.54
I-9 17 L.F. 15"ℓ C.P. CL. IV @ 1.00% Inv. = 351.20
I-10 152 L.F. 15"ℓ C.P. CL. IV
I-11
Match Line ℄ 40+00 See Sheet 4 of 53
SECTION 1 AREA 2
℄ 723.75' Arc = 310.18
310 L.F. 27"ℓ C.P. CL. IV
Existing Stream ℄ Culvert
I-4 1 G.L.F. 18"ℓ C.P. CL. IV @ 1.00% Inv. = 348.06
207 L.F. 30"ℓ C.P. CL. IV
47 L.F. 15"ℓ C.P. CL. IV
℄ 724.00' Arc = 296.83'
I-5 17 L.F. 15"ℓ C.P. CL. IV @ 1.00% Inv. = 348.82
I-3 12 G.L.F. 15"ℓ C.P. CL. IV @ 1.00% Inv. = 343.36
238 L.F. 33"ℓ C.P. CL. IV
℄ 724.00' Arc = 237.97'
Match Line ℄ 54+00 See Sheet 6 of 53

PLAN
Scale: 1" = 50'

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	6,220
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	6,220
3	STD. 7" COMB. CURB AND GUTTER	L.F.	2,800
4	PLACING TOPSOIL	S.Y.	-
5	EARTH EXCAVATION (ROADWAY)	C.Y.	-
6	CONC. SIDEWALK	L.F.	2800
7	15" CL IV RCP	L.F.	425
8	18" CL IV RCP	L.F.	335
9	24" CL IV RCP	L.F.	302
10	27" CL IV RCP	L.F.	310
11	30" CL IV RCP	L.F.	207
12	33" CL IV RCP	L.F.	238
13	A-5 INLET WIDTH = 4.5'	E.A.	1
14	A-5 INLET WIDTH = 3.5'	E.A.	1
15	A-5 INLET WIDTH = 2.5'	E.A.	3
16	A-10 INLET WIDTH = 4.0'	E.A.	1
17	A-10 INLET WIDTH = 3.5'	E.A.	1
18	A-10 INLET WIDTH = 2.5'	E.A.	2
19	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	-
20	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	-
21	SOD - DRAINAGE DITCHES	S.Y.	-

DEPARTMENT OF PUBLIC WORKS
D. H. Hickernell 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
CRADLEROCK WAY Sta. 40+00 to 54+00

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

PROFILE
Scale: H: 1"=50'
V: 1"=5'

CRADLEROCK WAY

Match Line ℄ 40+00 See Sheet 4 of 53
-3.00%
P.V.I. 40+50 372.00
P.O.C. 372.15
Corr. = 0.15
P.V.T. 41+10 370.80
120' V.C. SSD 500'
-2.00%
PROFILE GRADE LINE
Exist ℄ Ground
P.V.C. 44+75 363.50
P.V.I. 45+50 362.00
P.O.C. 362.04
Corr. = 0.04
150' V.C. SSD 500'
P.V.T. 46+25 360.65
-1.80%
℄ Dasher Driveway
Exist Ground 70' right of ℄
Exist Ground 70' left of ℄
P.V.C. 48+25 357.05
P.V.I. 49+00 355.70
P.O.C. 355.48
Corr. = 0.22
150' V.C. SSD 500'
P.V.I. 49+75 353.45
-3.00%
P.V.C. 50+75 350.45
P.V.I. 51+50 348.20
P.O.C. 348.58
Corr. = 0.38
150' V.C. SSD 500'
P.V.T. 52+25 347.45
-1.00%
P.V.C. 52+78 346.92
304' V.C. SSD = 750'+
Match Line ℄ 54+00 See Sheet 6 of 53

375 370 365 360 355 350 345 340 335 330

40+00 371.51 | 41+00 371.01 | 42+00 369.00 | 43+00 367.00 | 44+00 365.00 | 45+00 363.01 | 46+00 361.11 | 47+00 359.30 | 48+00 357.50 | 49+00 355.48 | 50+00 352.70 | 51+00 349.74 | 52+00 347.74 | 53+00 346.72 | 54+00 346.19
372.15 | 370.00 | 368.00 | 366.00 | 364.00 | 362.04 | 360.20 | 358.40 | 356.58 | 354.18 | 351.20 | 347.20 | 346.37

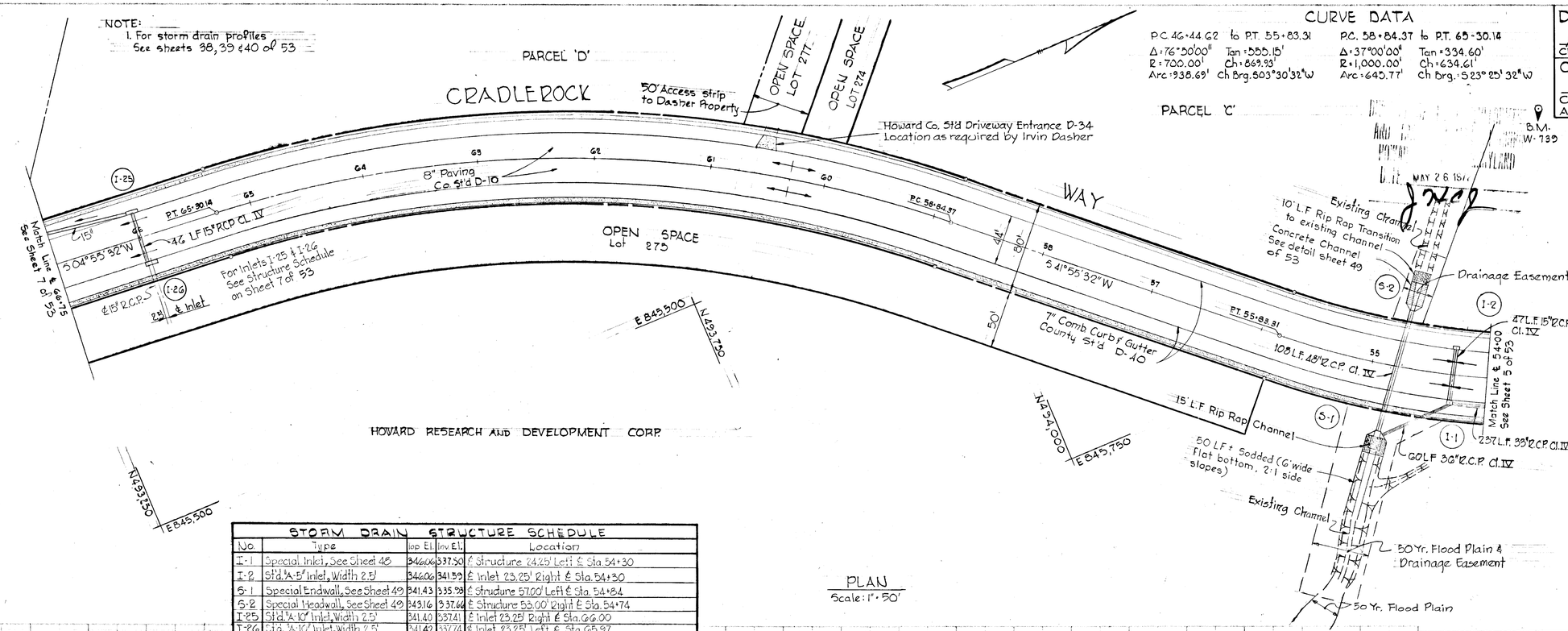
W.O. G53G-2B
#61

5/25/72

SHEET 5 OF 5

F-72-85C

NOTE:
1. For storm drain profiles See sheets 38, 39 & 40 of 53



PLAN
Scale: 1" = 50'

CURVE DATA

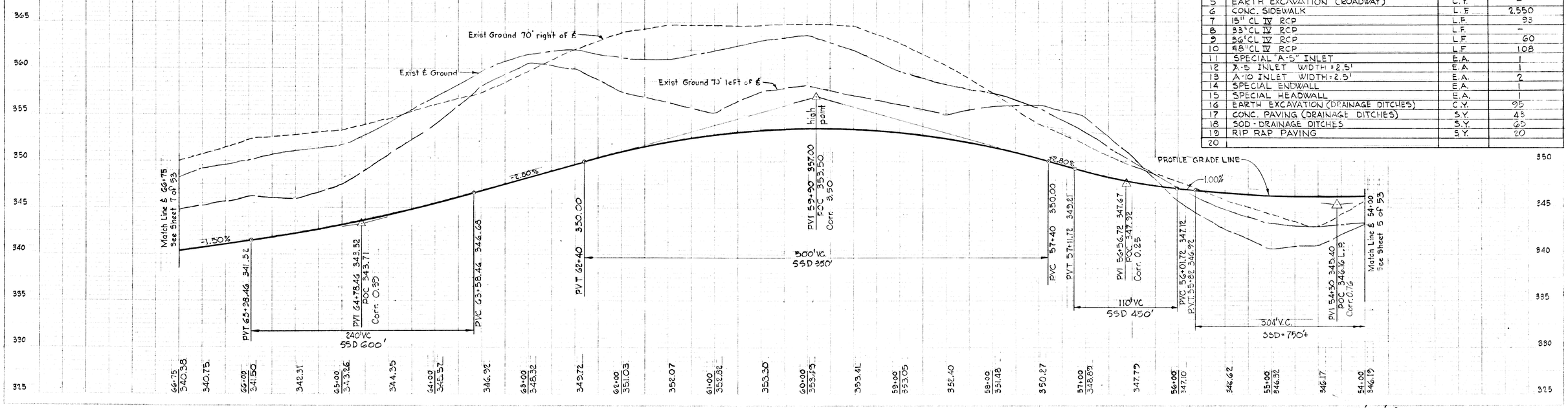
P.C. 46+44.62 to P.T. 55+83.31
Δ = 76°50'00" Tan = 555.15'
R = 700.00' Ch = 869.93'
Arc = 938.69' Ch Brg. S 03°30'32" W

P.C. 58+84.37 to P.T. 65+30.14
Δ = 37°00'00" Tan = 334.60'
R = 1,000.00' Ch = 634.61'
Arc = 645.77' Ch Brg. = S 23° 25' 32" W

STORM DRAIN STRUCTURE SCHEDULE				
No.	Type	Top El.	Inv El.	Location
I-1	Special Inlet, See Sheet 48	346.06	337.50	℄ Structure 24.25' Left ℄ Sta. 54+30
I-2	Std "A-5" Inlet, Width 2.5'	346.06	341.59	℄ Inlet 23.25' Right ℄ Sta. 54+30
S-1	Special Endwall, See Sheet 49	341.43	335.98	℄ Structure 57.00' Left ℄ Sta. 54+84
S-2	Special Headwall, See Sheet 49	343.16	337.66	℄ Structure 53.00' Right ℄ Sta. 54+74
I-25	Std "A-10" Inlet, Width 2.5'	341.40	337.41	℄ Inlet 23.25' Right ℄ Sta. GG.00
I-26	Std. "A-10" Inlet, Width 2.5'	341.42	337.74	℄ Inlet 23.25' Left ℄ Sta. G5.97

PROFILE
Scale: H: 1" = 50'
V: 1" = 5'

CRADLEROCK WAY



ESTIMATE OF QUANTITIES			
ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	5670
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	5670
3	STD. 7" COMB. CURB AND GUTTER	L.F.	2,550
4	PLACING TOPSOIL	S.Y.	-
5	EARTH EXCAVATION (ROADWAY)	C.Y.	-
6	CONC. SIDEWALK	L.F.	2,550
7	15" CL IV RCP	L.F.	93
8	33" CL IV RCP	L.F.	-
9	36" CL IV RCP	L.F.	60
10	48" CL IV RCP	L.F.	108
11	SPECIAL "A-5" INLET	E.A.	1
12	A-5 INLET WIDTH = 2.5'	E.A.	1
13	A-10 INLET WIDTH = 2.5'	E.A.	2
14	SPECIAL ENDWALL	E.A.	1
15	SPECIAL HEADWALL	E.A.	1
16	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	95
17	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	43
18	SOD - DRAINAGE DITCHES	S.Y.	65
19	RIP RAP PAVING	S.Y.	20
20			

DEPARTMENT OF PUBLIC WORKS
P. N. Mebeard 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

MAY 26 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
CRADLEROCK WAY Sta. 54+00 to GG+75

SCALE: As Shown DATE:

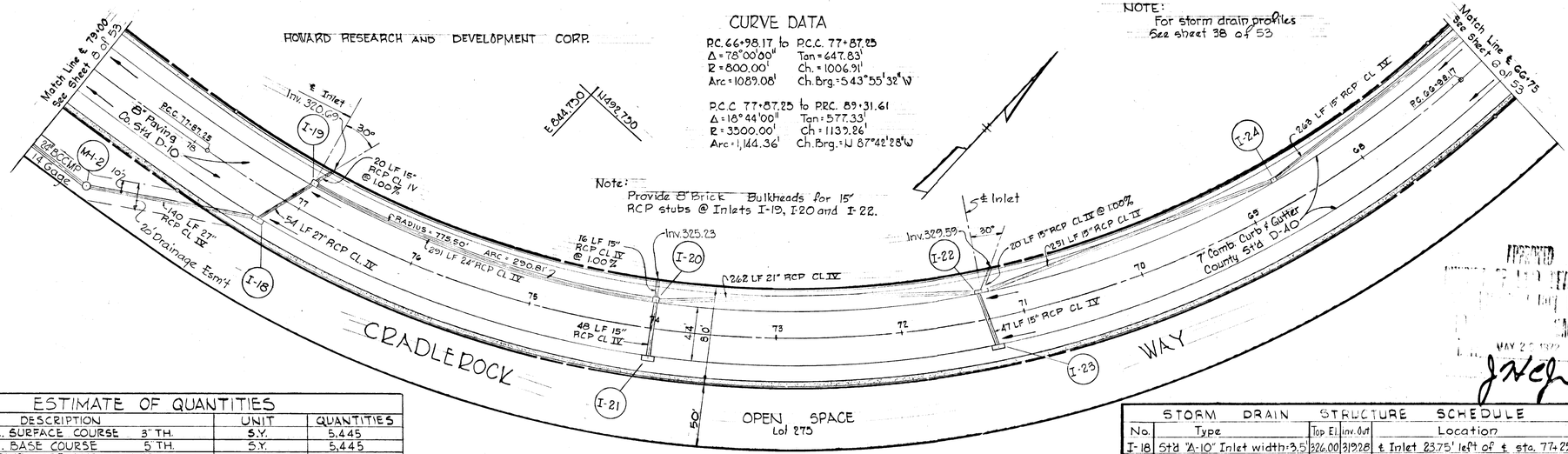
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72 SHEET 6 OF 53

F-72-85C



HOWARD RESEARCH AND DEVELOPMENT CORP.

CURVE DATA

P.C. 66+98.17 to P.C.C. 77+87.25
Δ = 78°00'00" Tan = 647.83'
R = 800.00' Ch. = 1006.91'
Arc = 1089.08' Ch. Brg. = S 43°55'32" W

P.C.C. 77+87.25 to P.R.C. 89+31.61
Δ = 18°44'00" Tan = 577.33'
R = 3500.00' Ch = 1139.26'
Arc = 1,144.36' Ch. Brg. = N 87°42'28" W

NOTE: For storm drain profiles See sheet 38 of 53

Note: Provide 8" Brick Bulkheads for 15" RCP stubs @ Inlets I-19, I-20 and I-22.

HOWARD RESEARCH AND DEVELOPMENT CORP.

PLAN
Scale: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
D. M. Weiland 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
HOWARD COUNTY PLANNING BOARD
HOWARD COUNTY, MARYLAND
MAY 27 1972
JWCh

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1.	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	5,445
2.	BIT. CONC. BASE COURSE 5" TH.	S.Y.	5,445
3.	STD. 7" COMB. CURB AND GUTTER	L.F.	2,450
4.	PLACING TOPSOIL	S.Y.	–
5.	EARTH EXCAVATION (ROADWAY)	C.Y.	–
6	CONC. SIDEWALK	L.F.	2,450
7	15" CL. IV RCP	L.F.	665
8	21" CL. IV RCP	L.F.	262
9	24" CL. IV RCP	L.F.	291
10	27" CL. IV RCP	L.F.	194
11	STD. A-5 INLET WIDTH = 5.0'	E.A.	2
12	STD. A-10 INLET WIDTH = 2.5'	E.A.	2
13	STD. A-10 INLET WIDTH = 3.5'	E.A.	2
14	STD. A-5 INLET WIDTH = 3.0'	E.A.	1
15	STD. MANHOLE	E.A.	1
16	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	–
17	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	–
18	SOD-DRAINAGE DITCHES	S.Y.	–

STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top El.	Inv. Out	Location
I-18	Std "A-10" Inlet width=3.5'	326.00	319.28	℄ Inlet 23.75' left of ℄ sta. 77+25
I-19	Std "A-5" Inlet width=5.0'	326.61	320.39	℄ Inlet 24.50' right of ℄ sta. 77+00
I-20	Std "A-5" Inlet width=5.0'	330.15	324.07	℄ Inlet 24.50' right of ℄ sta 74+00
I-21	Std "A-10" Inlet width=2.5'	330.15	325.17	℄ Inlet 23.25' left of ℄ sta 74+00
I-22	Std "A-10" Inlet width=3.5'	333.45	328.89	℄ Inlet 23.75' right of ℄ sta. 71+30
I-23	Std "A-10" Inlet width=2.5'	333.57	329.48	℄ Inlet 23.25' left of ℄ sta. 71+25
I-24	Std "A-5" Inlet width=3.0'	337.95	332.44	℄ Inlet 23.50' right of ℄ sta 68+70
MH-2	Std. Manhole	321.8±	315.60	℄ Manhole 80.00' left of ℄ sta. 78+50

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
CRADLEROCK WAY Sta. 66+75 to 79+00

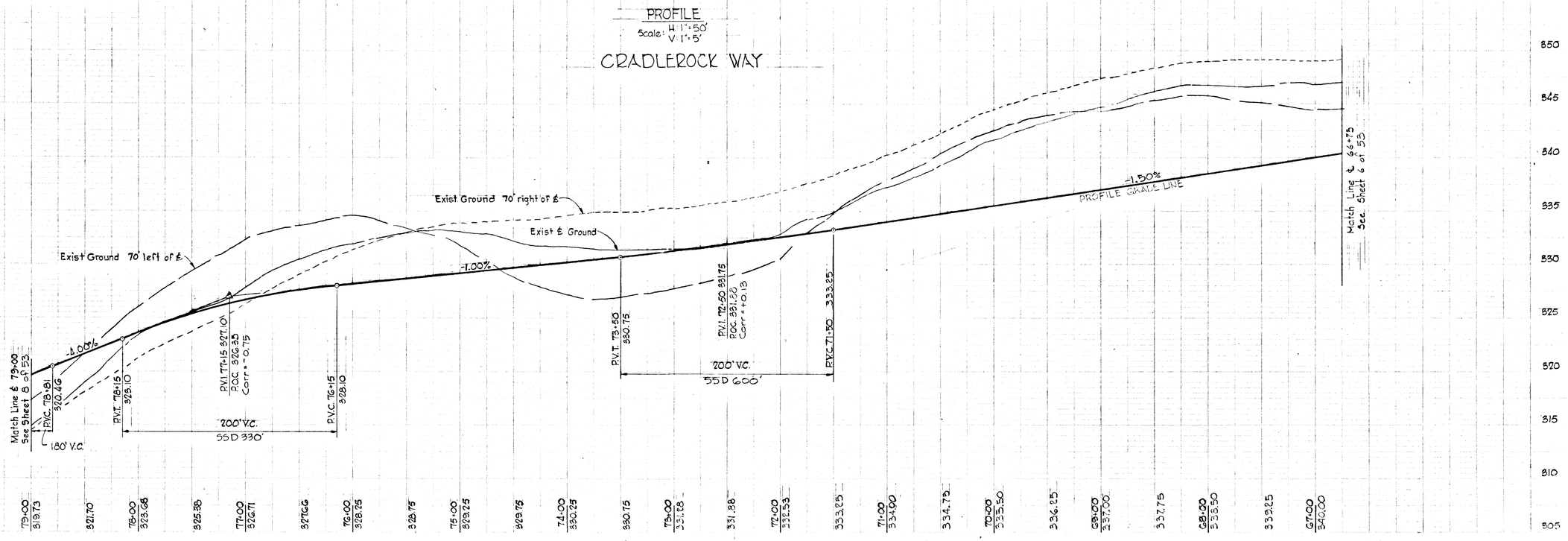
SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

PROFILE
Scale: H 1"=50'
V 1"=5'

CRADLEROCK WAY



W.O. 6536-2B
#61

5/25/72 SHEET 7 OF 53

F-72-85C

CURVE DATA

P.C.C. 77+87.25 to P.R.C. 89+31.61		P.R.C. 89+31.61 to P.T. 99+26.44	
Δ = 18°44'00"	Tan. = 577.33'	Δ = 38°00'00"	Tan. = 516.49'
R = 3500.00'	Ch. = 1139.26'	R = 1500.00'	Ch. = 976.70'
Arc = 1,114.36'	Ch.Brg = N 87°42'28"W	Arc = 994.83'	Ch.Brg = S 82°39'32"W

N 492,750

E 614,750

NOTE: For storm drain profiles See sheets 25, 38 & 44 of 53

STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top El.	Inv. El.	Location
I-27	Std. A-5 Inlet, width = 4.0'	314.60	306.33	℄ Inlet 22' left of ℄ sta 82+17
I-28	Std. A-5 Inlet, width = 4.0'	314.60	309.15	℄ Inlet 22' right of ℄ sta 82+17
I-29	Std. A-10 Inlet, width = 2.5'	318.68	313.85	℄ Inlet 23.25' right of ℄ sta 85+00
MH-1	Special Manhole, See Sheet 50	304.00	299.00	See Plan & Profile
MH-3	Standard Manhole	302.00	297.12	See Plan & Profile
S-4	Special Endwall, See Sheet 50	303.00	298.00	See Plan & Profile
S-5	Special Endwall, See Sheet 50	303.00	297.90	See Plan & Profile

PARCEL "E"

CRADLEROCK WAY

HOWARD RESEARCH AND DEVELOPMENT CORP.

Match Line ℄ 90+00 See Sheet 9 of 53

P.R.C. 89+31.61

8" Paving Co. Std. D-10

Provide 8" brick bulkhead in 18" RCP

30°

20 LF 18" RCP CL IV

281 LF 18" RCP CL IV

48 LF 18" RCP CL IV

7" Comb. Curb & Gutter County Std. D-40

Drainage Easement

Proposed Bridge

Proposed Channel

Existing stream

Proposed 8" Sanitary Sewer

Perpetual Drainage Easement

Note: For proposed Bridge and Bridge Channel and storm drains S-4 to manhole-1 and S-5 to manhole-3, See Sheets 24 and 25 of 53

Match Line ℄ 79+00 See Sheet 7 of 53

OPEN SPACE LOT 275

OPEN SPACE LOT 276

I-29 I-28 I-27 MH-3 MH-1 S-5 S-4

86 LF 18" BCCMP 16 Gage

218 LF 24" BCCMP 14 Gage

20' Drainage Easement

50 LF Twin 18" RCP CL IV

19 LF 24" RCP CL IV

Perpetual Drainage Easement

Existing 24" Sanitary Sewer

50 Yr. Flood Plain

Future Lake

50 Yr. Flood Plain & Drainage Esm't

Ex. Stream

B.M. W-755 Existing 24" Sanitary Sewer

E 614,500

N 492,250

PLAN

Scale: 1" = 50'

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	4,500
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	4,500
3	ST'D. 7" COMB. CURB AND GUTTER	L.F.	2,020
4	PLACING TOPSOIL	S.Y.	
5	EARTH EXCAVATION (ROADWAY)	C.Y.	
6	CONC. SIDEWALK	L.F.	2,020
7	18" RCP CL. IV	L.F.	449
8	18" BCCMP 16 Gage	L.F.	86
9	21" RCP CL. IV	L.F.	19
10	24" BCCMP 14 Gage	L.F.	218
11	STD A-5 INLET	EA.	2
12	STD A-10 INLET	EA.	1
13	ST'D MANHOLE	EA	1
14	SPECIAL MANHOLE	EA	1
15	SPECIAL HEADWALL	EA.	2
16	EARTH EXCAVATION (DRAINAGE DITCH)	C.Y.	370
17	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	500
18	MASONARY WALL	C.Y.	40
19	RIP RAP PAVING	S.Y.	60

Existing 12

PROFILE

Scale: H: 1"=50' V: 1"=5'

CRADLEROCK WAY

Match Line ℄ 90+00 See Sheet 9 of 53

High Point 88+17.72 326.91

Existing ℄ Ground

PROFILE GRADE LINE

Existing Ground 70' Left of ℄

Existing Ground 70' Right of ℄

P.V.I. 88+72 333.50 P.O.C. 326.63 Corr = -6.87

+4.00%

550' V.C. SSD 275'

P.V.C. 85+97 322.50

P.V.T. 85+43.67 320.37

180' V.C. SSD 375'

P.V.I. 84+83.67 316.77 P.O.C. 317.44 Corr = +0.67

P.V.C. 83+63.67 315.87

180' V.C. SSD 500'

+1.00%

P.V.T. 82+77 315.00

P.V.I. 82+17 314.40 P.O.C. 314.70 Low Point Corr = +0.30

-1.00%

P.V.C. 81+57 315.00

℄ Underpass

180' V.C. SSD 375'

P.V.T. 80+61 315.56

P.V.I. 79+71 316.86 P.O.C. 317.54 Corr = +0.68

Match Line ℄ 79+00 See Sheet 7 of 53

90+00	89+00	88+00	87+00	86+00	85+00	84+00	83+00	82+00	81+00	80+00	79+00
326.87	326.28	326.83	325.64	322.62	318.76	316.34	315.23	314.72	315.57	316.65	318.73
325.51	326.81	326.50	324.37	320.62	317.35	315.73	314.79		315.07	316.08	318.10

335 330 325 320 315 310 305 300 295 290

DEPARTMENT OF PUBLIC WORKS

C. A. Hoskins 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED DEPT. OF LAND DEVELOPMENT & TRANSPORTATION PLANNING HOWARD COUNTY, MARYLAND MAY 26 1972

J. Wey

HOWARD RESEARCH AND DEVELOPMENT CORP.

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
CRADLEROCK WAY Sta. 79+00 to 90+00

SCALE: As Shown DATE:

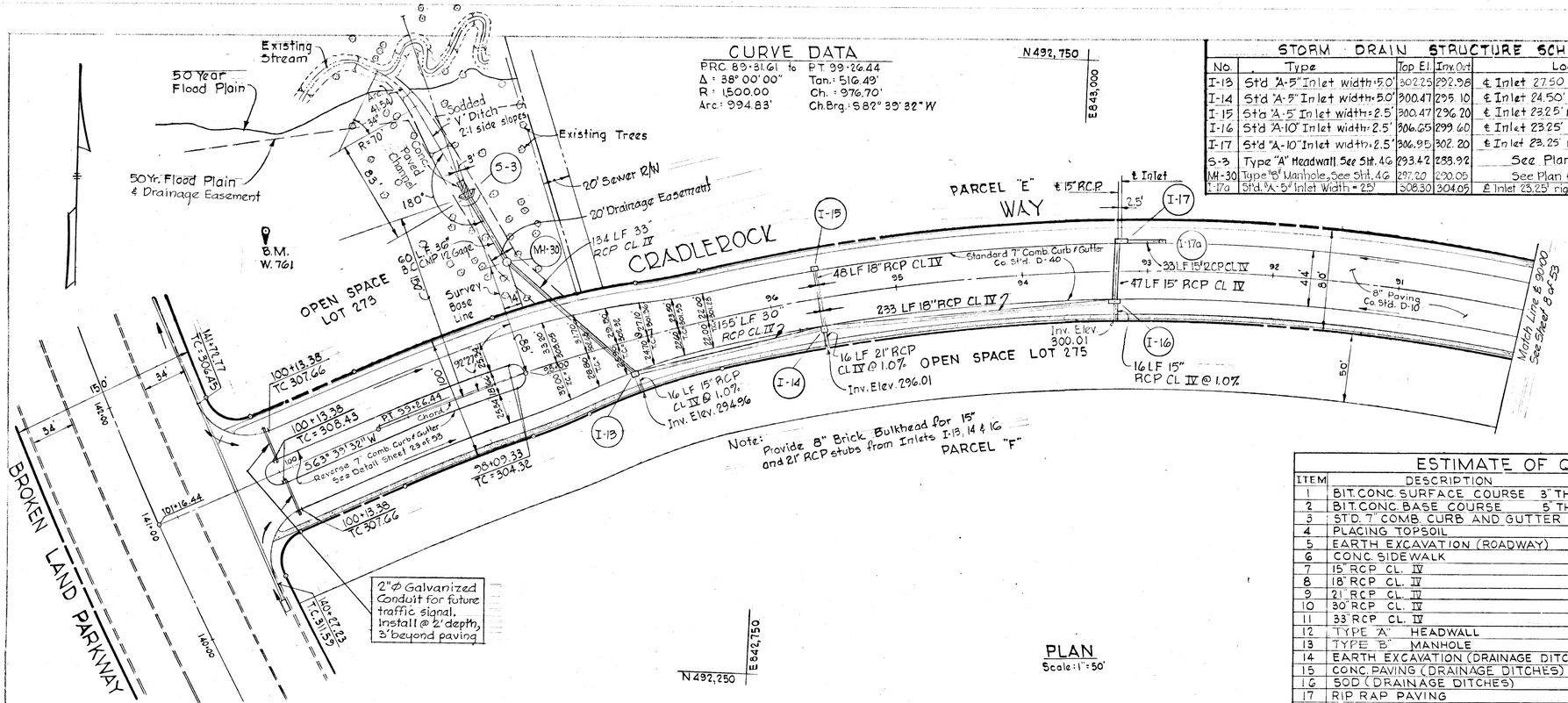
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72 SHEET 8 OF 53

F-72-85C



STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top El.	Inv. Out	Location
I-13	Std "A-5" Inlet width=5.0'	302.25	292.98	℄ Inlet 27.50 left of ℄ Sta. 97+18
I-14	Std "A-5" Inlet width=5.0'	300.47	295.10	℄ Inlet 24.50' left of ℄ Sta. 95+62
I-15	Std "A-5" Inlet width=2.5'	300.47	296.20	℄ Inlet 23.25' right of ℄ Sta. 95+62
I-16	Std "A-10" Inlet width=2.5'	306.65	299.60	℄ Inlet 23.25' left of ℄ Sta. 93+66
I-17	Std "A-10" Inlet width=2.5'	306.95	302.20	℄ Inlet 23.25' right of ℄ Sta. 93+21
S-3	Type "A" Headwall See Sht. 46	293.42	288.92	See Plan & Profile
MH-30	Type "B" Manhole, See Sht. 46	297.20	290.05	See Plan & Profile
I-17a	Std. "A-5" Inlet Width = 2.5'	308.30	304.05	℄ Inlet 23.25' right of ℄ Sta. 92+88

Note: For storm drain profiles see sheet 38 of 53

DEPARTMENT OF PUBLIC WORKS
J. H. Holland 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

MAY 26 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
CRADLEROCK WAY Sta. 90+00 to 101+16.44

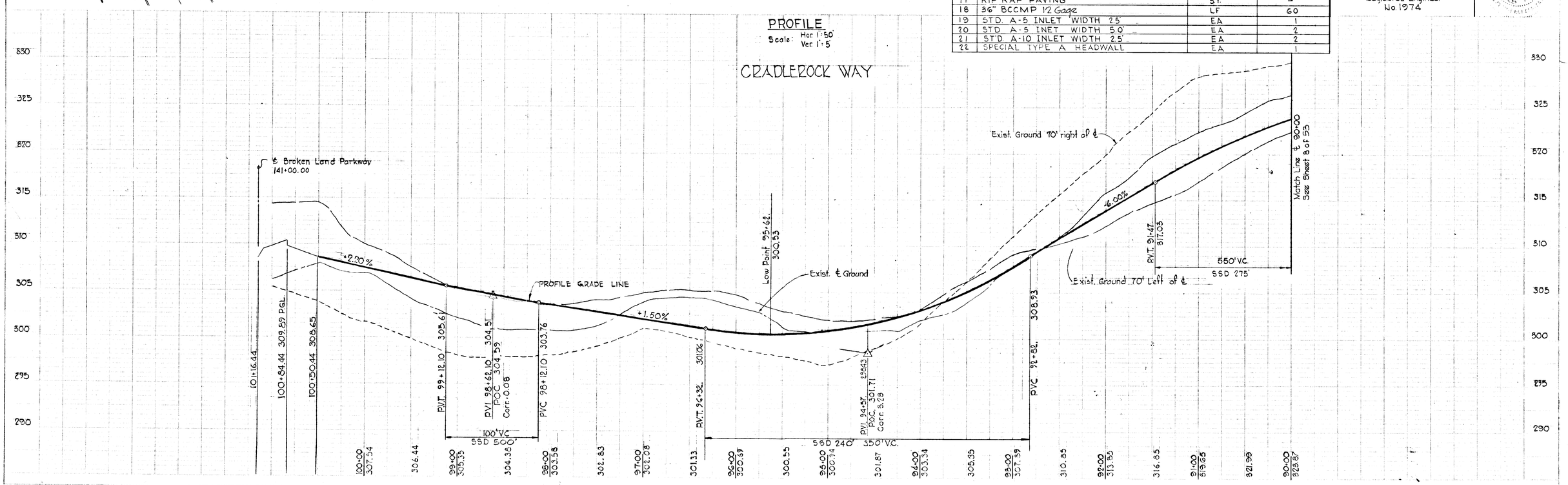
SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	5,040
2	BIT. CONC. BASE COURSE 5" TH	S.Y.	5,040
3	STD. 7" COMB. CURB AND GUTTER	L.F.	2,620
4	PLACING TOPSOIL	S.Y.	–
5	EARTH EXCAVATION (ROADWAY)	C.Y.	–
6	CONC. SIDEWALK	L.F.	2,070
7	15" RCP CL. IV	L.F.	128
8	18" RCP CL. IV	L.F.	281
9	21" RCP CL. IV	L.F.	16
10	30" RCP CL. IV	L.F.	155
11	33" RCP CL. IV	L.F.	134
12	TYPE "A" HEADWALL	EA.	1
13	TYPE "B" MANHOLE	EA.	1
14	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	220
15	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	65
16	SOD (DRAINAGE DITCHES)	S.Y.	150
17	RIP RAP PAVING	S.Y.	–
18	36" BCCMP 12 Gage	L.F.	60
19	STD. A-5 INLET WIDTH 2.5'	EA	1
20	STD. A-5 INET WIDTH 5.0'	EA	2
21	STD A-10 INLET WIDTH 2.5'	EA	2
22	SPECIAL TYPE A HEADWALL	EA	1



W.O. G53G-2B
#61

5/25/72

Sheet 9 of 53

F-72-85C

For Continuation See Sheet 14 of 53

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1.	BIT. CONC. SURFACE COURSE 1½" TH.	S.Y.	2,565
2	BIT. CONC. SURFACE COURSE 3" TH.	S.Y.	2,655
3	BIT. CONC. BASE 5" TH.	S.Y.	5,220
4.	MODIFIED COMB CURB AND GUTTER	L.F.	2,765
5	EARTH EXCAVATION (ROADWAY)	C.Y.	-
6.	CONC. SIDEWALK	L.F.	2,725
7.	PLACING TOPSOIL	C.Y.	-
8.	STANDARD INLET A-5 WIDTH = 2.5'	E.A.	1
9.	15" RCP CL. IV	L.F.	100

STORM DRAIN STRUCTURAL SCHEDULE

Nº	TYPE	TOP EL.	INV. EL.	LOCATION
I-37	Std. A-5 Inlet width 2.5'	368.29	363.88	℄ Inlet 15.92' right of ℄ Sta 1+75

CURVE DATA

℄ Int. 1+00.00 to ℄ Int. 2+46.95
Δ = 09°50'52" Tan. = 73.66'
R. = 855.00' Ch. = 146.77'
Arc.= 146.95' Ch.Brg.= N31°18'26"W

℄ Int. 2+46.95 to ℄ Int. 3+02.93
Δ = 03°45'04" Tan. = 28.00'
R. = 855.00' Ch. = 55.97
Arc.= 55.98' Ch.Brg.= N44°06'24"W

℄ Int. 3+02.93 to PRC. 4+00.90
Δ = 06°33'54" Tan. = 49.04
R. = 855.00' Ch. = 97.91
Arc.= 97.97' Ch.Brg.= N49°15'53"W

PRC. 4+00.90 to ℄ Int. 6+31.30
Δ = 26°24'05" Tan. = 117.28'
R. = 500.00' Ch. = 228.36'
Arc.= 230.40' Ch.Brg.= N39°20'47"W

B.M. W-709

HOWARD RESEARCH AND DEVELOPMENT CORP.

CURVE DATA

℄ Int. 6+31.30 to ℄ Int. 7+09.20
Δ = 08°55'36" Tan. = 39.03'
R. = 500.00' Ch. = 77.82'
Arc.= 77.90' Ch.Brg.= N21°40'57"W

℄ Int. 7+09.20 to PRC. 10+17.49
Δ = 35°19'39" Tan. = 159.22'
R. = 500.00' Ch. = 303.43'
Arc.= 308.29' Ch.Brg.= N00°26'40"E

PRC. 10+17.49 to ℄ Int. 10+54.75
Δ = 01°46'45" Tan. = 18.63'
R. = 1,200.00' Ch. = 37.26'
Arc.= 37.26' Ch.Brg.= N17°13'07"E

℄ Int. 10+54.75 to ℄ Int. 11+61.28
Δ = 05°05'11" Tan. = 53.30'
R. = 1,200.00' Ch. = 106.49'
Arc.= 106.53' Ch.Brg.= N13°47'09"E

℄ Int. 11+61.28 to P.T. 13+84.50"
Δ = 10°39'29" Tan. = 111.93'
R. = 1,200.00' Ch. = 222.90'
Arc.= 223.22' Ch.Brg.= N05°54'49"E

Note
1. For storm drain profiles, see Sheets 40 & 44 of 53

DEPARTMENT OF PUBLIC WORKS
B. H. Meshaud 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev.Date	Rev.No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
YOUNGHEART LANE

SCALE: As Shown DATE:

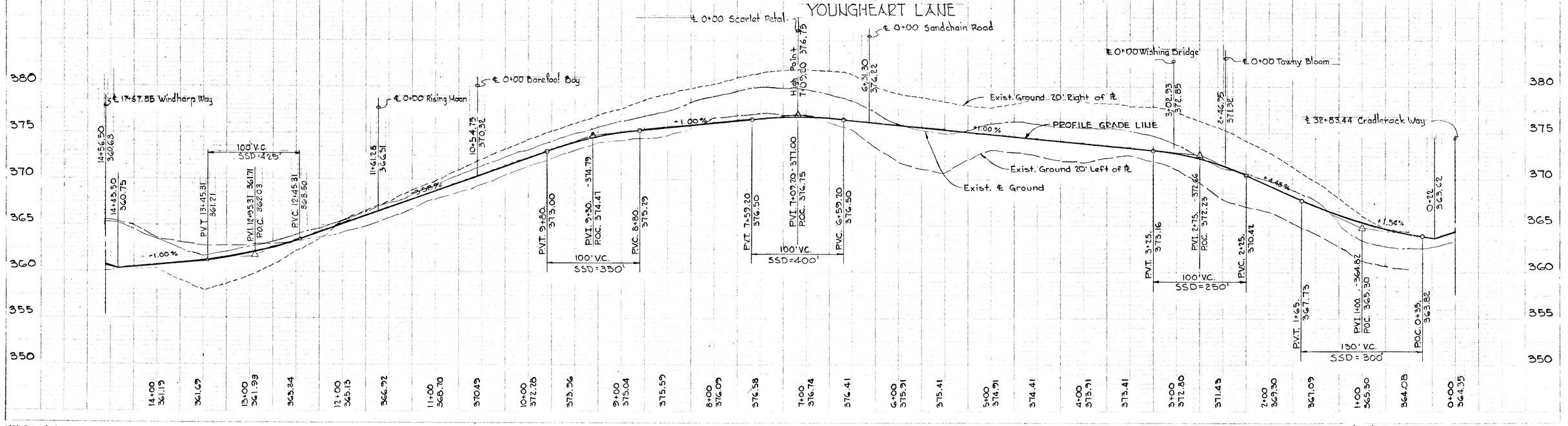
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A McCord
KENNETH A McCORD
Registered Engineer
No. 1974

PLAN
Scale: 1" = 50'

PROFILE
Scale: Vert: 1" = 5'
Horz: 1" = 50'

YOUNGHEART LANE



W.O. 6536-2B
#61

5/25/72

Sheet 10 of 53
F-72-85C

STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top. El.	Inv. Out	Location
I-86	Std "A-5" Width 2.5'	355.00	354.40	℄ Inlet is 1.25' back of L.P. Sta. 1+50.29
I-91	Std "C" Width 2.5'	351.00	346.50	See Plan and Profile
I-92	Std "A-5" Width 2.5'	343.75	339.35	℄ Inlet is 1.25 back of L.P. Sta. 1+15.03
I-109	Std "A-10" Width 2.5'	373.18	369.12	℄ Inlet 15.92' Right of ℄ Youngheart Lane Sta 3+19
I-110	Std "A-5" Width 3.0'	369.54	364.67	℄ Inlet 16.17' Rt. of ℄ Wishing Bridge Sta 0+70
I-111	Std "A-5" Width 2.5'	360.91	354.43	℄ Inlet is 1.25' back of L.P. sta. 1+42.35
MH-17	Standard Manhole	348.80	343.05	See Plan and Profile
MH-18	Standard Manhole	340.30	334.10	See Plan and Profile
MH-19	Manhole Type "B", See Sht. 4G	337.50	331.11	See Plan and Profile
MH-29	Standard Manhole	351.55	345.00	See Plan and Profile
S-14	Type "A" Headwall, See Sht. 4G	353.28	350.83	See Plan and Profile
S-20	Type "C" Headwall, See Sht.	346.83	344.83	See Plan and Profile

* Use Dimensions For 18" Headwall

DEPARTMENT OF PUBLIC WORKS
D. H. McLeod 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

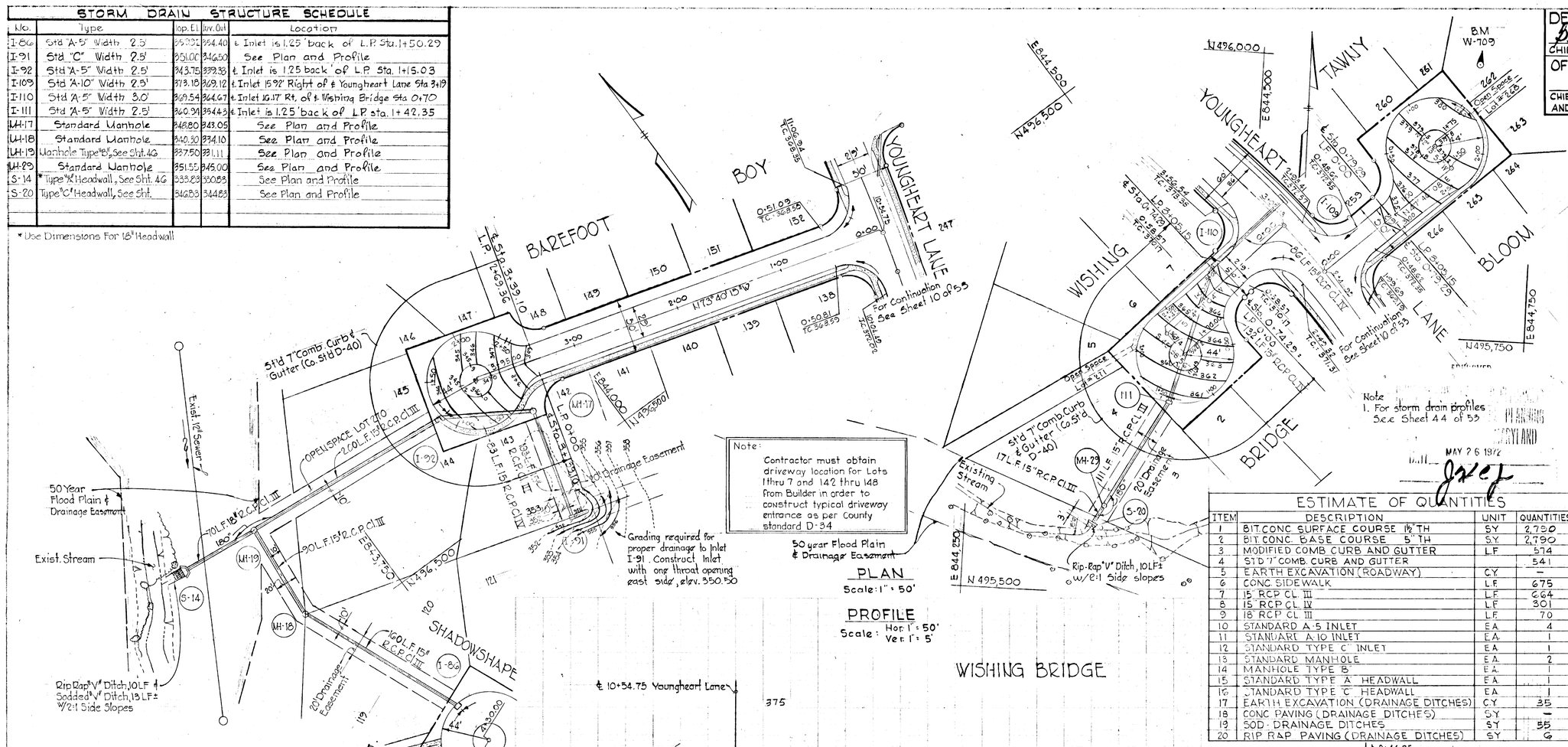
PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN & PROFILE
TAWNY BLOOM, WISHING BRIDGE AND BAREFOOT BOY

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

KENNETH A. McCORD
Registered Engineer
No. 1974

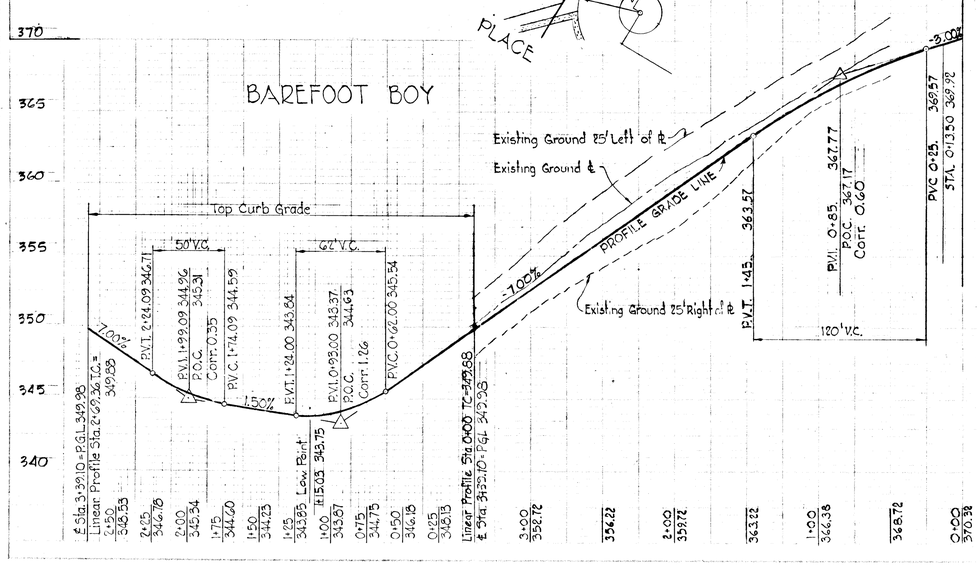


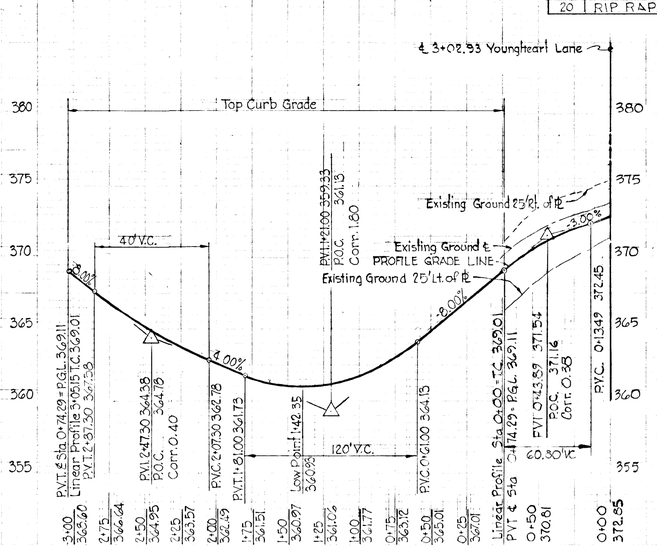
PLAN
Scale: 1" = 50'

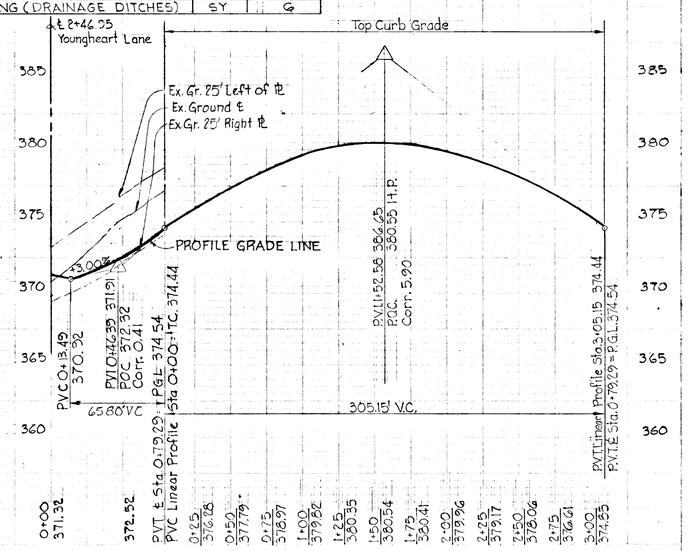
PROFILE
Scale: Hor. 1" = 50'
Ver. 1' = 5'

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH	SY	2,790
2	BIT. CONC. BASE COURSE 5" TH	SY	2,790
3	MODIFIED COMB. CURB AND GUTTER	L.F.	574
4	STD 7" COMB. CURB AND GUTTER		541
5	EARTH EXCAVATION (ROADWAY)	C.Y.	—
6	CONC. SIDEWALK	L.F.	675
7	15" RCP Cl. III	L.F.	664
8	15" RCP Cl. IV	L.F.	301
9	18" RCP Cl. III	L.F.	70
10	STANDARD A-5 INLET	EA.	4
11	STANDARD A-10 INLET	EA.	1
12	STANDARD TYPE C INLET	EA.	1
13	STANDARD MANHOLE	EA.	2
14	MANHOLE TYPE B	EA.	1
15	STANDARD TYPE A HEADWALL	EA.	1
16	STANDARD TYPE C HEADWALL	EA.	1
17	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	35
18	CONC. PAVING (DRAINAGE DITCHES)	SY.	—
19	SOD. DRAINAGE DITCHES	SY.	55
20	RIP RAP PAVING (DRAINAGE DITCHES)	SY.	6







#61

W.O. 6536-2B

5/25/72

SHEET 11 OF 53

F-72-85C

DEPARTMENT OF PUBLIC WORKS

D. M. Mokeland 5/30/72

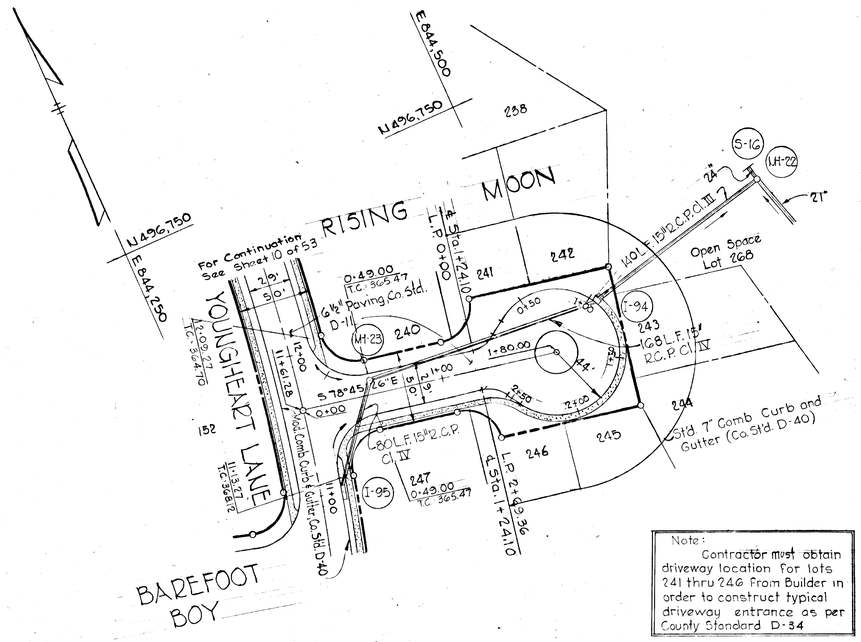
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

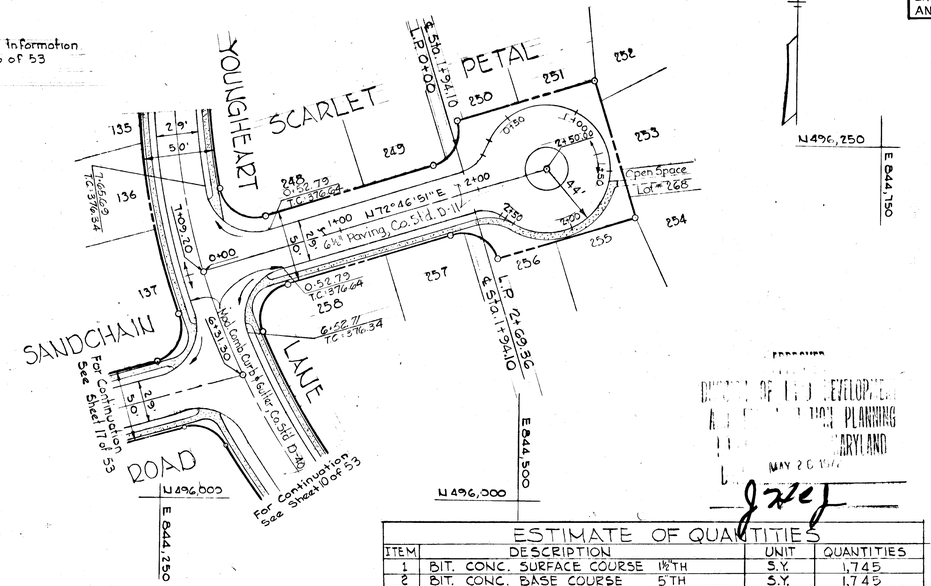
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Note:
For Storm drain profiles
See Sheet 40 of 53

Storm Drain Information
See Sheet 16 of 53



Note:
Contractor must obtain driveway location for lots 241 thru 246 from Builder in order to construct typical driveway entrance as per County Standard D-34

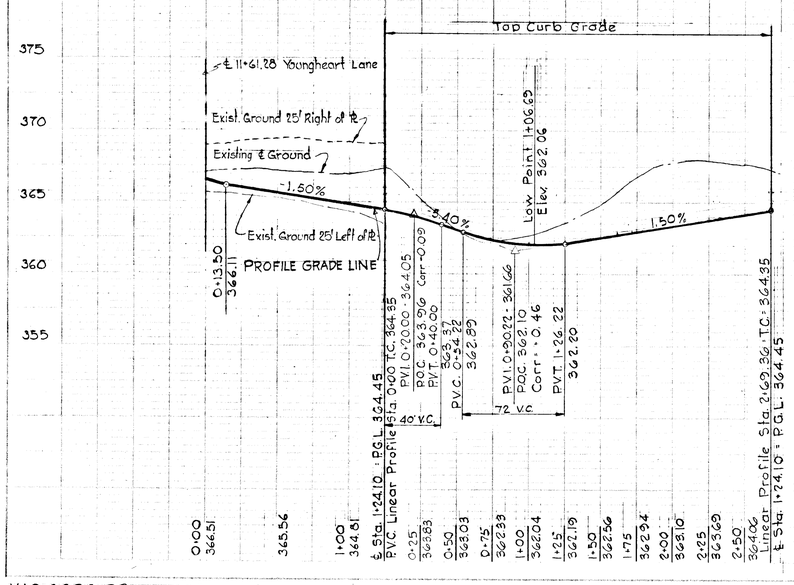


STORM DRAIN STRUCTURE SCHEDULE				
No.	TYPE	TOP EL.	INV. EL.	LOCATION
I-94	Std. "A-5" Inlet width = 2.5'	368.09	364.20	℄ Inlet is 1.25' back of L.P. Sta 1+06.69
I-95	Std. "A-5" Inlet width = 2.5'	368.11	364.49	℄ Inlet 15.09' right ℄ Sta. 1+00
MH-23	Type "S" Manhole, See Sheet	365.85	361.76	℄ Manhole 10.00' left ℄ Sta. 0+50

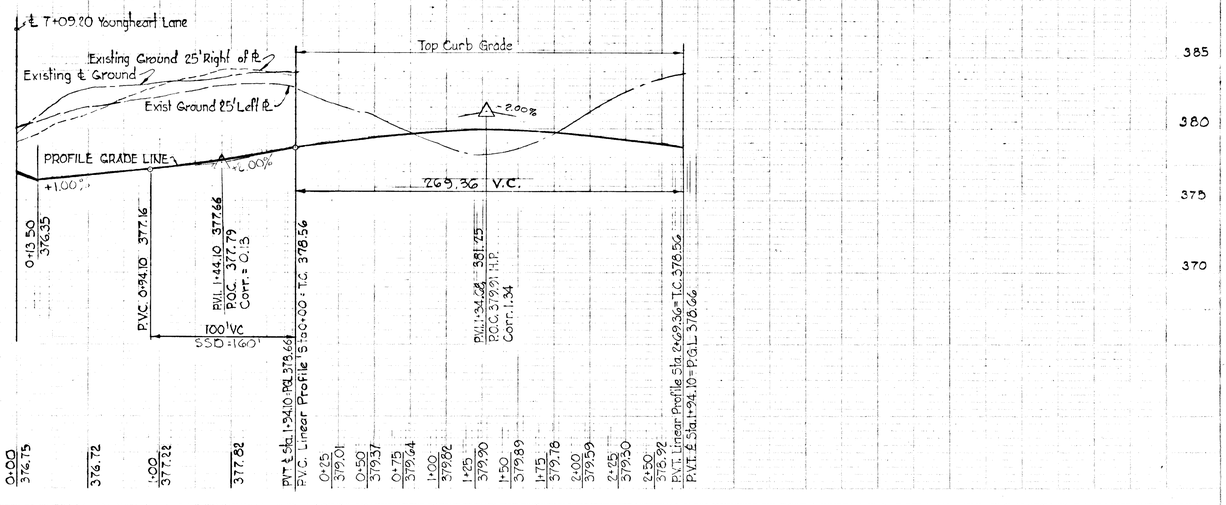
PLAN
Scale : 1" = 50'

PROFILE
Scale: Vert. 1" = 5'
Horz. 1" = 50'

RISING MOON



SCARLET PETAL



ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½"TH	S.Y.	1,745
2	BIT. CONC. BASE COURSE 5"TH	S.Y.	1,745
3	MODIFIED COMB. CURB AND GUTTER	L.F.	688
4	STD 7" COMB CURB AND GUTTER	L.F.	252
5	EARTH EXCAVATION (ROADWAY)	C.Y.	-
6	CONC. SIDEWALK	L.F.	470
7	15" CL III RCP	L.F.	140
8	15" CL IV RCP	L.F.	248
9	ST'D. "A-5" INLET WIDTH = 2.50'	E.A.	1
10	ST'D. "A-10" INLET WIDTH = 2.50'	E.A.	1
11	TYPE "S" MANHOLE	E.A.	1

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION , AREA

PROJECT TITLE
PLAN AND PROFILE
SCARLET PETAL AND RISING MOON

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

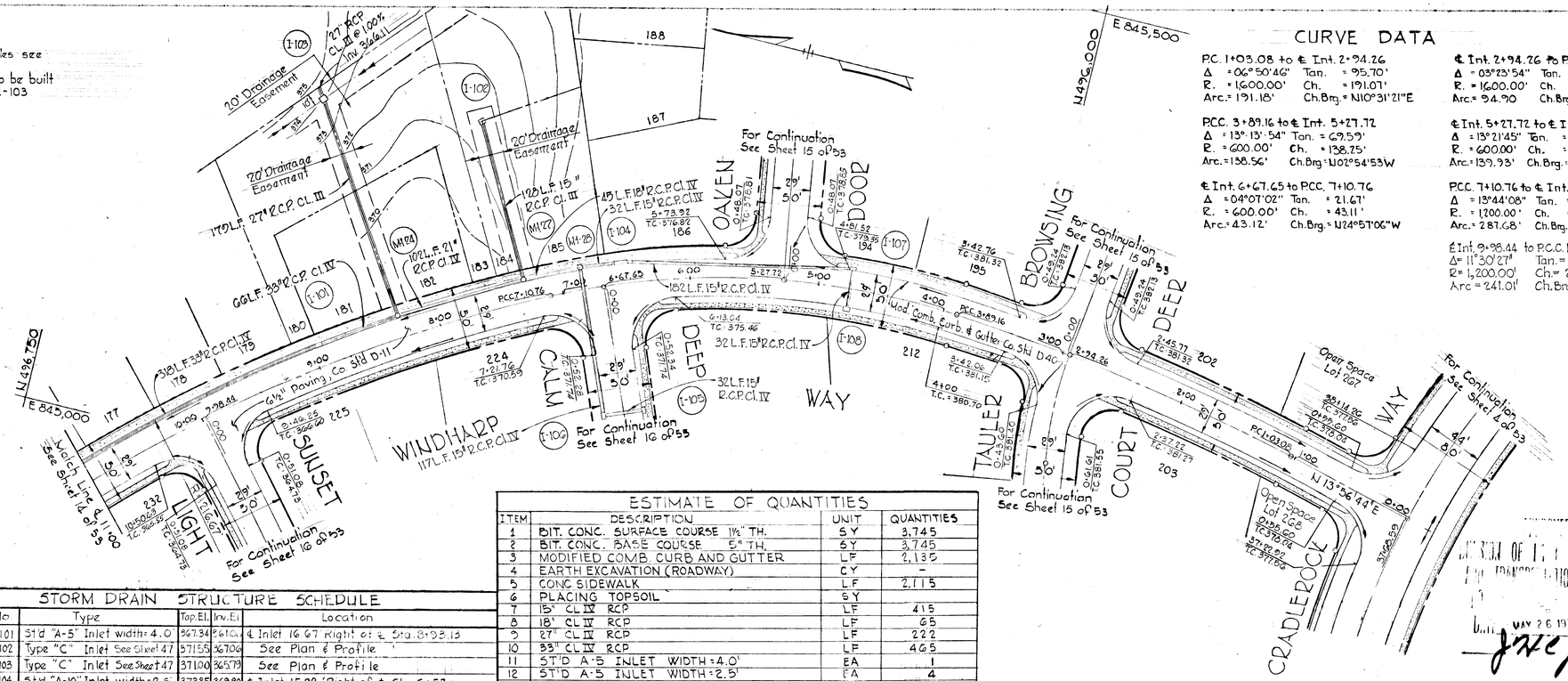
MAY 26 1972

W.O. 6536-2B
#61

5/25/72

F-72-85C

Note:
1. For storm drain profiles see Sheet No 41 of 53
2. 8" Brick Bulkhead to be built in 27" stub from I-103



CURVE DATA

P.C. 1+03.08 to ℄ Int. 2+94.26
Δ = 06° 50' 46" Tan. = 95.70'
R. = 1,600.00' Ch. = 191.07'
Arc. = 191.18' Ch.Brg. = N10° 31' 21" E

℄ Int. 2+94.26 to P.C.C. 3+89.16
Δ = 03° 23' 54" Tan. = 47.46'
R. = 1,600.00' Ch. = 94.89'
Arc. = 94.90 Ch.Brg. = N05° 24' 01" E

P.C.C. 3+89.16 to ℄ Int. 5+27.72
Δ = 13° 13' 54" Tan. = 69.59'
R. = 600.00' Ch. = 138.75'
Arc. = 138.56' Ch.Brg. = N02° 54' 53" W

℄ Int. 5+27.72 to ℄ Int. 6+67.65
Δ = 13° 21' 45" Tan. = 70.29'
R. = 600.00' Ch. = 139.62'
Arc. = 139.93' Ch.Brg. = N16° 12' 42" W

℄ Int. 6+67.65 to P.C.C. 7+10.76
Δ = 04° 07' 02" Tan. = 21.67'
R. = 600.00' Ch. = 43.11'
Arc. = 43.12' Ch.Brg. = N24° 57' 06" W

P.C.C. 7+10.76 to ℄ Int. 9+98.44
Δ = 13° 44' 08" Tan. = 144.53'
R. = 1,200.00' Ch. = 286.99'
Arc. = 287.68' Ch.Brg. = N33° 52' 41" W

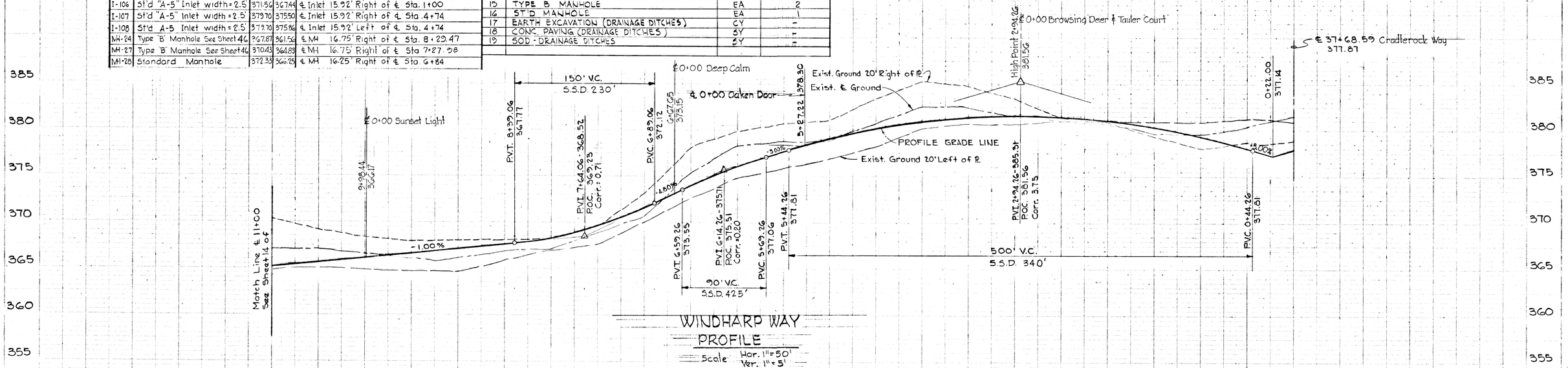
℄ Int. 9+98.44 to P.C.C. 12+39.45
Δ = 11° 30' 27" Tan. = 120.91'
R = 1,200.00' Ch. = 240.61'
Arc = 241.01' Ch.Brg. = N 46° 29' 58" W

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH.	SY	3,745
2	BIT. CONC. BASE COURSE 5" TH.	SY	3,745
3	MODIFIED COMB. CURB AND GUTTER	LF	2,135
4	EARTH EXCAVATION (ROADWAY)	CY	-
5	CONC SIDEWALK	LF	2,115
6	PLACING TOPSOIL	SY	
7	15" CL IV RCP	LF	415
8	18" CL IV RCP	LF	65
9	27" CL III RCP	LF	222
10	33" CL IV RCP	LF	465
11	ST'D A-5 INLET WIDTH = 4.0'	EA	1
12	ST'D A-5 INLET WIDTH = 2.5'	EA	4
13	ST'D A-10 INLET WIDTH = 2.5'	EA	1
14	TYPE C INLET	EA	2
15	TYPE B MANHOLE	EA	2
16	ST'D MANHOLE	EA	1
17	EARTH EXCAVATION (DRAINAGE DITCHES)	CY	-
18	CONC. PAVING (DRAINAGE DITCHES)	SY	-
19	SOD - DRAINAGE DITCHES	SY	-

STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top. El.	Inv. El.	Location
I-101	Std "A-5" Inlet width = 4.0'	367.34	361.04	℄ Inlet 16.67 Right of ℄ Sta. 8+93.13
I-102	Type "C" Inlet See Sheet 47	371.55	367.06	See Plan & Profile
I-103	Type "C" Inlet See Sheet 47	371.00	365.79	See Plan & Profile
I-104	Std "A-10" Inlet width = 2.5'	373.85	369.80	℄ Inlet 15.92' Right of ℄ Sta. 6+53
I-105	Std "A-5" Inlet width = 2.5'	371.56	367.80	℄ Inlet 15.92' Left of ℄ Sta. 1+00
I-106	Std "A-5" Inlet width = 2.5'	371.56	367.44	℄ Inlet 15.92' Right of ℄ Sta. 1+00
I-107	Std "A-5" Inlet width = 2.5'	379.70	375.50	℄ Inlet 15.92' Right of ℄ Sta. 4+74
I-108	Std "A-5" Inlet width = 2.5'	379.70	375.86	℄ Inlet 15.92' Left of ℄ Sta. 4+74
MH-24	Type 'B' Manhole See Sheet 46	367.87	361.56	℄ MH 16.75' Right of ℄ Sta. 8+29.47
MH-27	Type 'B' Manhole See Sheet 46	370.43	364.88	℄ MH 16.75' Right of ℄ Sta. 7+27.98
MH-28	Standard Manhole	372.33	366.75	℄ MH 16.25' Right of ℄ Sta. 6+84



WINDHARP WAY PROFILE

Scale: Hor. 1" = 50' Ver. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
D. H. Richards 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
WINDHARP WAY Sta. 0+00 to 11+00

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

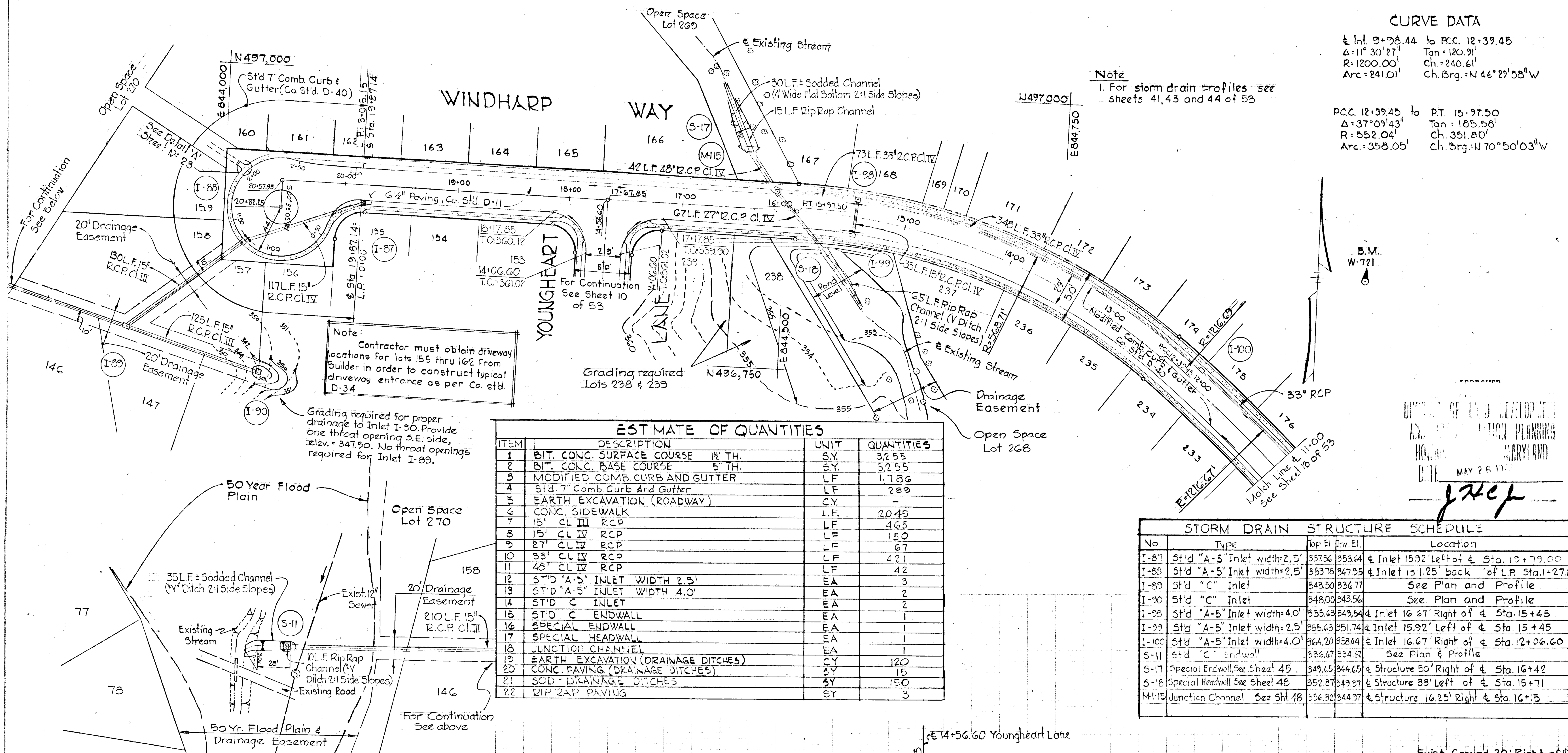
KENNETH A. McCORD
Registered Engineer
No. 1974

MAY 26 1972

W.O. 6536-25
#61

5/25/72

Sheet 13 of 53
F-72-85C



Note
1. For storm drain profiles see sheets 41, 43 and 44 of 53

CURVE DATA

℄ Int. 9+98.44 to P.C.C. 12+39.45
Δ = 11° 30' 27" Tan = 120.91'
R = 1200.00' Ch. = 240.61'
Arc = 241.01' Ch. Brg. = N 46° 29' 58" W

P.C.C. 12+39.45 to P.T. 15+97.50
Δ = 37° 09' 43" Tan = 185.58'
R = 552.04' Ch. 351.80'
Arc. = 358.05' Ch. Brg. = N 70° 50' 03" W

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH.	S.Y.	3,255
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	3,255
3	MODIFIED COMB. CURB AND GUTTER	LF	1,786
4	St'd. 7" Comb. Curb And Gutter	LF	289
5	EARTH EXCAVATION (ROADWAY)	C.Y.	–
6	CONC. SIDEWALK	L.F.	2,045
7	15" CL III RCP	LF	465
8	15" CL IV RCP	LF	150
9	27" CL IV RCP	LF	67
10	33" CL IV RCP	LF	421
11	48" CL IV RCP	LF	42
12	ST'D "A-5" INLET WIDTH 2.5'	EA	3
13	ST'D "A-5" INLET WIDTH 4.0'	EA	2
14	ST'D C INLET	EA	2
15	ST'D C ENDWALL	EA	1
16	SPECIAL ENDWALL	EA	1
17	SPECIAL HEADWALL	EA	1
18	JUNCTION CHANNEL	EA	1
19	EARTH EXCAVATION (DRAINAGE DITCHES)	CY	120
20	CONC. PAVING (DRAINAGE DITCHES)	SY	15
21	SOD - DRAINAGE DITCHES	SY	150
22	RIP RAP PAVING	SY	3

STORM DRAIN STRUCTURE SCHEDULE

No	Type	Top El.	Inv. El.	Location
I-87	St'd "A-5" Inlet width: 2.5'	357.56	353.64	℄ Inlet 15.92' Left of ℄ Sta. 19+79.00
I-88	St'd "A-5" Inlet width: 2.5'	353.78	347.95	℄ Inlet is 1.25' back of L.P. Sta. 1+27.83
I-89	St'd "C" Inlet	343.50	336.77	See Plan and Profile
I-90	St'd "C" Inlet	348.00	343.56	See Plan and Profile
I-98	St'd "A-5" Inlet width: 4.0'	355.63	349.54	℄ Inlet 16.67' Right of ℄ Sta. 15+45
I-99	St'd "A-5" Inlet width: 2.5'	355.63	351.74	℄ Inlet 15.92' Left of ℄ Sta. 15+45
I-100	St'd "A-5" Inlet width: 4.0'	364.20	358.04	℄ Inlet 16.67' Right of ℄ Sta. 12+06.60
S-11	St'd "C" Endwall	336.67	334.67	See Plan & Profile
S-17	Special Endwall, See Sheet 45	349.65	344.65	℄ Structure 50' Right of ℄ Sta. 16+42
S-18	Special Headwall See Sheet 48	352.87	349.37	℄ Structure 33' Left of ℄ Sta. 15+71
M-I-15	Junction Channel See Sht. 48	356.32	344.97	℄ Structure 16.25' Right ℄ Sta. 16+15

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972
JHC

DEPARTMENT OF PUBLIC WORKS
D. M. Weheand 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
WINDHARP WAY Sta. 11+00 to 20+82.85

SCALE: As Shown DATE:

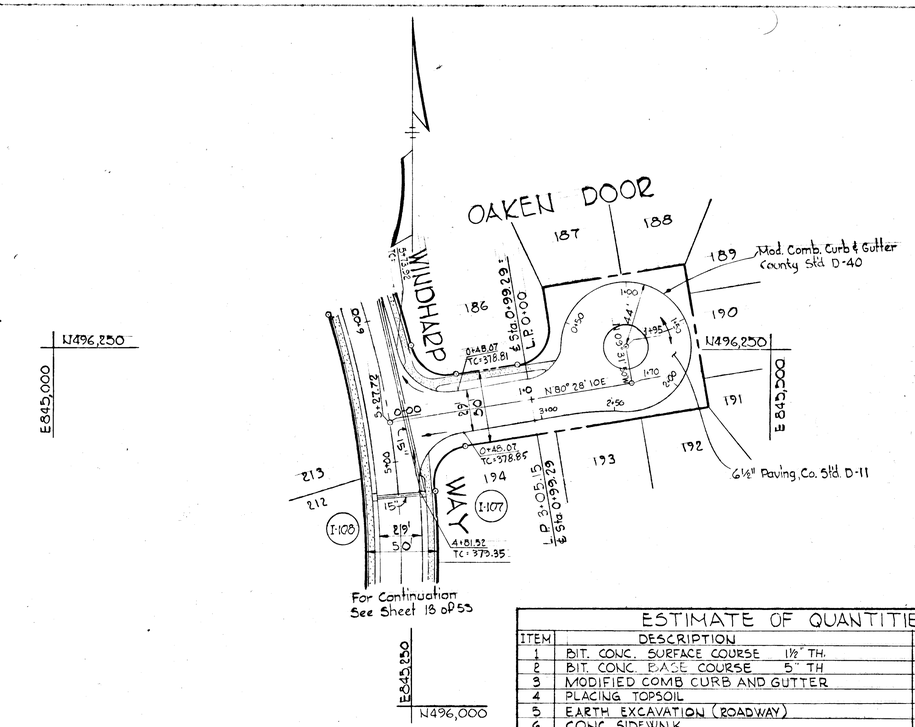
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

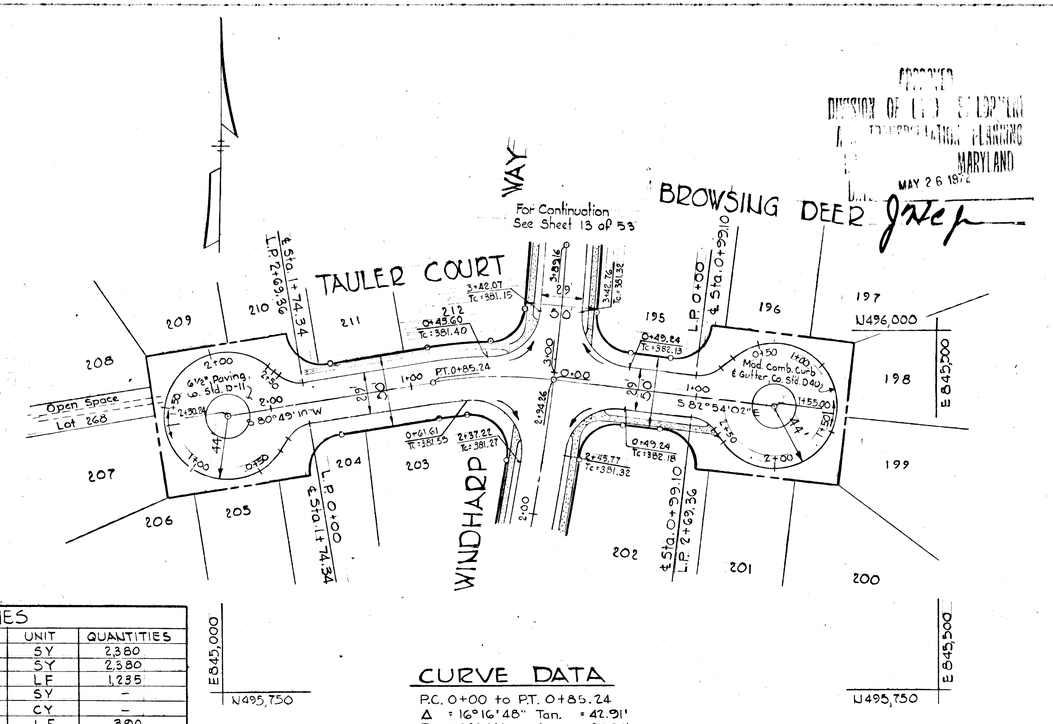
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

#61 W.O. 6536-2B

5/25/72

F-72-85C





ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH.	SY	2,380
2	BIT. CONC. BASE COURSE 5" TH	SY	2,380
3	MODIFIED COMB CURB AND GUTTER	L.F	1,235
4	PLACING TOPSOIL	SY	–
5	EARTH EXCAVATION (ROADWAY)	C.Y	–
6	CONC. SIDEWALK	L.F	390
7	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y	–
8	CONC. PAVING (DRAINAGE DITCHES)	SY	–
9	SOD - DRAINAGE DITCHES	SY	–

CURVE DATA

P.C. 0+00 to P.T. 0+85.24
Δ = 16°16'48" Tan. = 42.91'
R. = 300.00' Ch = 84.96'
Arc. = 85.24' Ch. Brg. = S 88°57'34" W

DEPARTMENT OF PUBLIC WORKS
D. M. Wilmot 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
MARYLAND
MAY 26 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
BROWSING DEER, TAULER COURT AND OAKEN DOOR

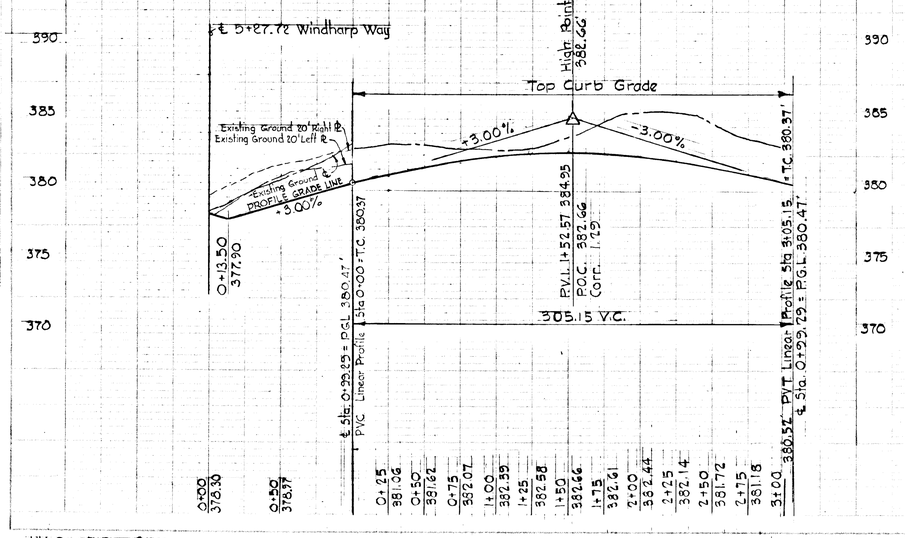
SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

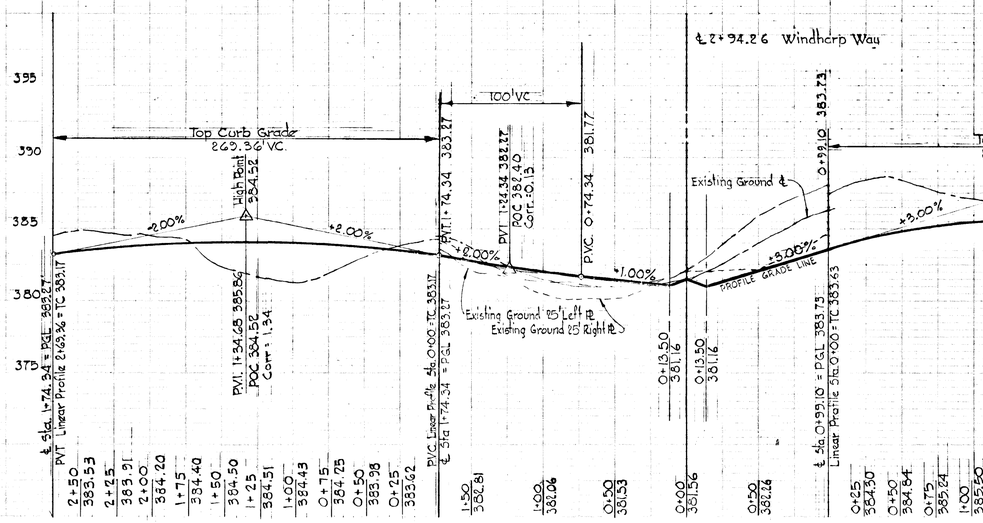
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

PROFILE
Scale: Hor. 1"=50'
Ver. 1"=5'

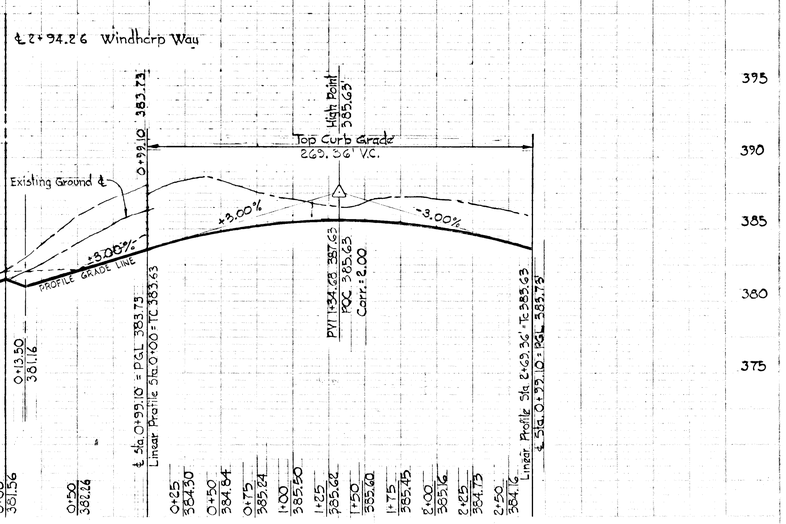
OAKEN DOOR



TAULER COURT



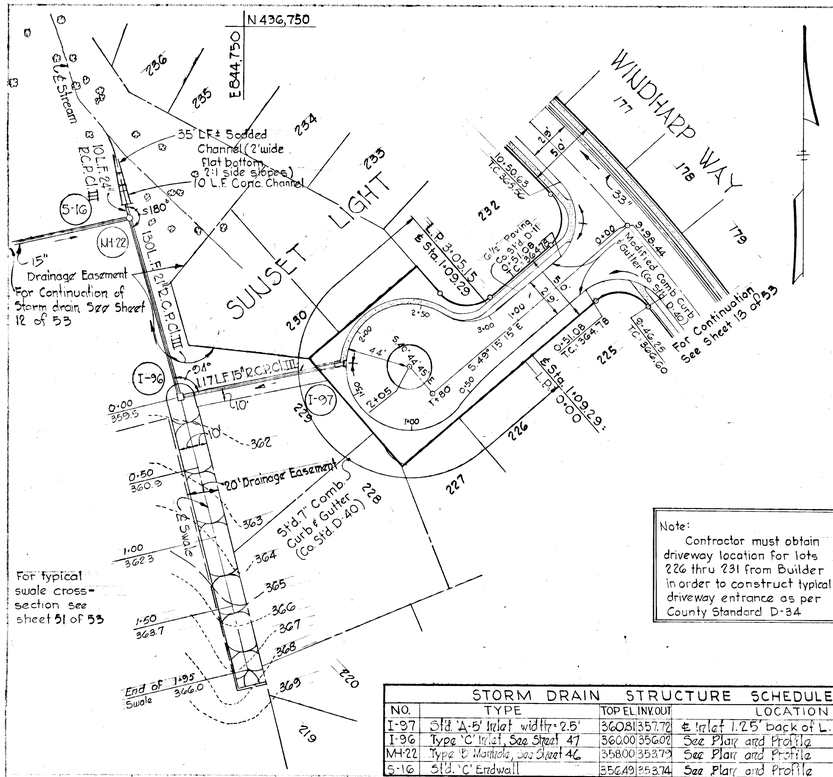
BROWSING DEER

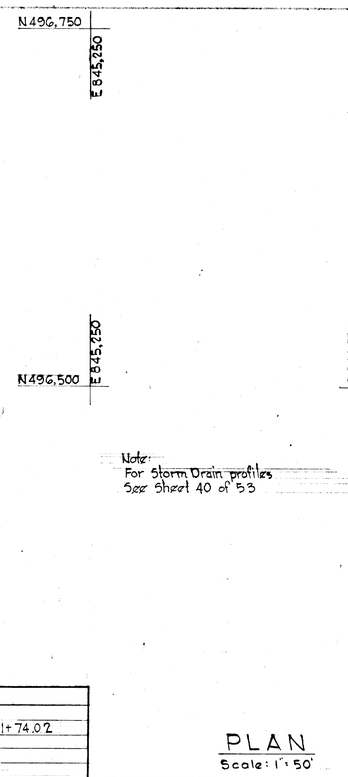


W.O. 6536-2B
#61

5/25/72

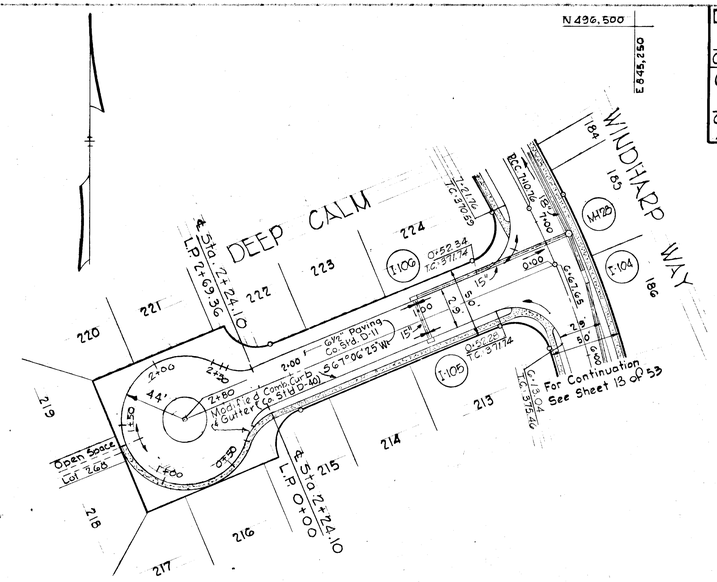
F-72-852





Note:
For Storm Drain profiles See Sheet 40 of 53

Note:
Contractor must obtain driveway location for lots 226 thru 231 from Builder in order to construct typical driveway entrance as per County Standard D-34

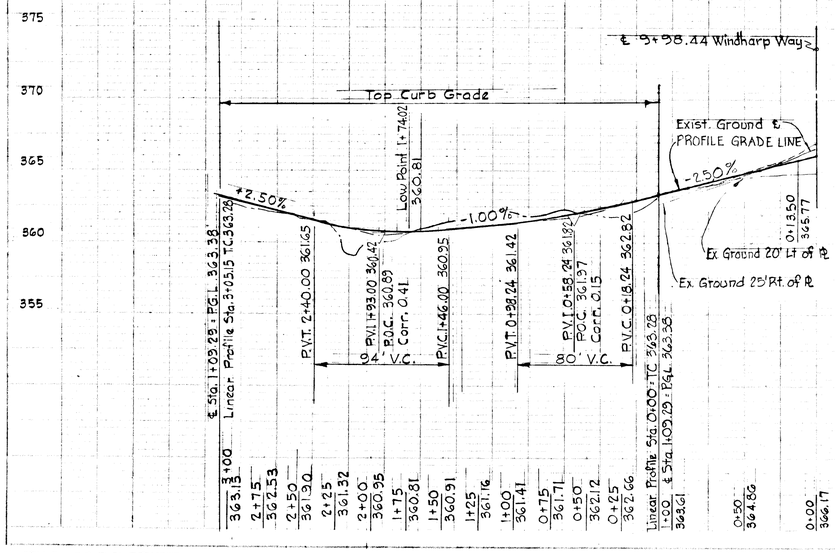


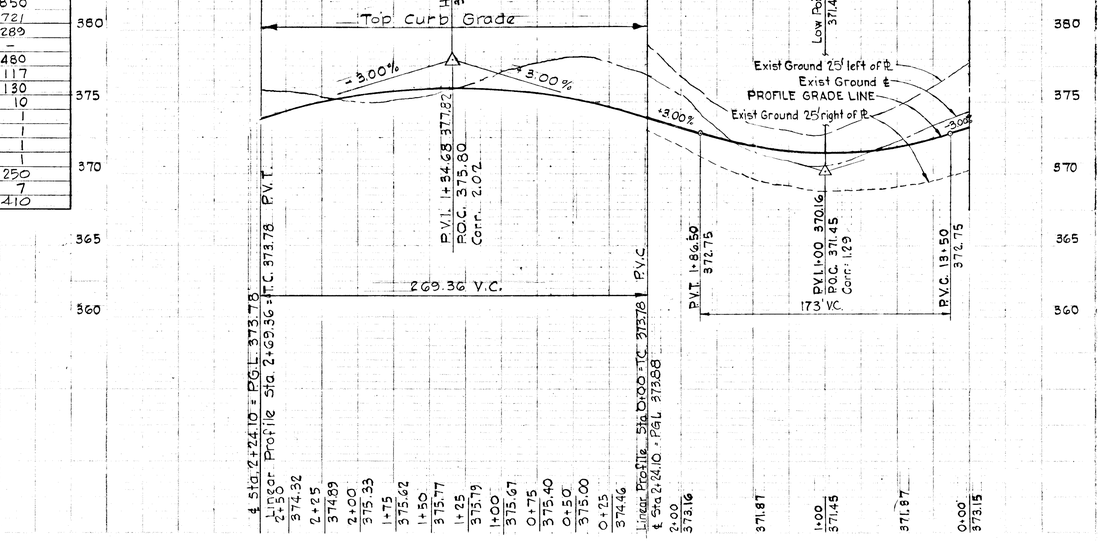
STORM DRAIN STRUCTURE SCHEDULE			
NO.	TYPE	TOP EL INV. OUT	LOCATION
I-97	Std 'A-5' Inlet width = 2.5'	360.81 357.72	℄ Inlet 1.25' back of L.P. Sta. 1+74.02
I-96	Type 'C' Inlet, See Sheet 47	360.00 356.02	See Plan and Profile
MH-22	Type 'B' Manhole, see Sheet 46	358.00 353.79	See Plan and Profile
S-16	Std. 'C' Endwall	356.49 353.74	See Plan and Profile

PLAN
Scale: 1" = 50'

PROFILE
Scale: Ver. 1" = 5'
Hor 1" = 50'

ESTIMATE OF QUANTITIES			
ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH.	S.Y.	1850
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	1850
3	COMB. CURB AND GUTTER (MODIFIED)	L.F.	721
4	STD 7" COMB. CURB AND GUTTER	L.F.	289
5	EARTH EXCAVATION (ROADWAY)	C.Y.	–
6	CONC. SIDEWALK	L.F.	480
7	15" CL III RCP	L.F.	117
8	21" CL III RCP	L.F.	130
9	24" CL III RCP	L.F.	10
10	A-5 INLET WIDTH = 2.5'	EA.	1
11	'C' INLET	EA.	1
12	Type 'B' Manhole	EA.	1
13	STANDARD TYPE 'C' ENDWALL	EA.	1
14	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	250
15	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	7
16	SOD - DRAINAGE DITCHES	S.Y.	410





DEPARTMENT OF PUBLIC WORKS
D. M. Mcleond 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
DEPARTMENT OF LAND DEVELOPMENT AND PLANNING
HOWARD COUNTY, MARYLAND
MAY 26 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
DEEP CALM AND SUNSET LIGHT

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72

Sheet 16 of 53
F-72-85C

CURVE DATA

P.C. 3+23.53 to ℄ Int. 4+69.56
Δ = 06°58'20" Tan. = 73.10'
R = 1200.00' Ch. = 145.94'
Arc = 146.03' Ch.Brg. = S71°09'30"W

℄ Int. 4+69.56 to P.T. 6+45.17
Δ = 08°23'05" Tan. = 87.96'
R = 1200.00' Ch. = 175.45'
Arc = 175.61' Ch.Brg. = S63°28'47"W

P.C. 7+61.24 to P.C.C. 16+20.47
Δ = 75°44'19" Tan. = 505.45'
R = 650.00' Ch. = 798.02'
Arc = 859.23' Ch.Brg. = N82°50'35"W

Match Line ℄ 14+00 See Sheet 18 of 53
50Yr Flood Plain
6½" Paving Co. Std D-11
50 Year Flood Plain & Drainage Easement
Open Space Lot 270
Open Space Lot 271
SANDCHAIN ROAD
Modified Comb Curb & Gutter, Co Std D-40
For Continuation See Sheet 20 of 53
TINTED HILL ROAD
Drainage Easement
B.M. W-718
SHADOWSHAPE PLACE
FLOWER
OPEN
YOUNGHEART
RAINBOW
SCARLET PETAL
SAYN
LANE
For Continuation See Sheet 19 of 53
For Continuation See Sheet 12 of 53
For Continuation See Sheet 10 of 53
For Continuation See Sheet 13 of 53
Open Space Lot 270
20' Drainage Easement
N 495,750
E 843,750
20' Sewer R/W
50 Yr. Flood Plain & Drainage Easement
50 Yr. Flood Plain
Exist Stream
5.1F Sodded "V" Ditch
10L.F Paved Rip Rap V. Ditch 2:1 Side Slopes
S 74° 38' 40" W
N 72° 46' 51" E
NOTE:
1. For storm drain profiles, See sheet 18 of 53

STORM DRAIN STRUCTURE SCHEDULE

NO.	Type	Top El	Inv Out	Location
I-38	Std "A-5" Width 2.5'	351.06	345..	℄ Inlet 15.92' Left of ℄ Sandchain Rd. Sta. 5+25
I-39	Std "A-5" Width 2.5'	351.68	346.25	℄ Inlet 15.98' Right of ℄ Sandchain Rd. Sta. 5+25
I-40	Std "C" Width 2.5'	352.67	347.20	℄ Inlet 35' Right of ℄ Sandchain Rd. Sta. 3+54.04
I-41	Std "A-10" Width 2.5'	353.77	348.01	℄ Inlet 15.92' Right of ℄ Sandchain Rd. Sta. 2+90
I-42	Std "A-5" Width 2.5'	361.76	357.30	℄ Inlet 15.92' Right of ℄ Open Flower Sta 0+57.50
I-43	Std "A-5" Width 3.0'	350.27	346.75	℄ Inlet is 1.25' back of L.P. sta. 1+82.33
I-59	Std "A-10" Width 2.5'	353.39	349.49	℄ Inlet 15.92' Right of ℄ Tinted Hill Sta. 0+60
I-60	Std "A-5" Width 2.5'	353.99	350.00	℄ Inlet 15.92' Left of ℄ Tinted Hill Sta. 0+60
MH-4	Standard Manhole	336.10	327.50	See Plan and Profile
MH-5	Standard Manhole	354.46	348.80	℄ Manhole 18' Right of ℄ Sandchain Sta 3+54.04
MH-8	Standard Manhole	341.50	335.80	See Plan and Profile
MH-10	Standard Manhole	352.54	346.90	℄ Manhole 18' Right of Sandchain Rd Sta 6+68
MH-12	Standard Manhole	351.15	345.70	℄ Manhole is 2.00' Back of L.P. Sta. 2+24.10
S-7	Type "M" Headwall, See Sht. 46	338.45	327.20	See Plan and Profile

PLAN
Scale: 1" = 50'

PROFILE
Scale: Vert. 1" = 5'
Horz. 1" = 50'

SANDCHAIN ROAD

Exist Ground 25' right of ℄
Exist Ground 25' left of ℄
PROFILE GRADE LINE
Exist ℄ Ground
-1.00%
-9.60%
Match Line ℄ 14+00 See Sheet 18 of 53
PVI 13+97.52 313.62
PVI 11+77.52 315.23
POC 315.70
Corr 3.47
320' V.C. SSD 200'
PVC 10+17.52 330.59
14+00 313.00
13+00 314.19
12+00 317.55
11+00 323.58
10+00 332.27
313.50
315.53
320.23
327.61
337.07

SANDCHAIN ROAD

Match Line ℄ 9+26.76 See This Sheet
Exist Ground 25' right of ℄
Exist Ground 25' left of ℄
PROFILE GRADE LINE
Exist ℄ Ground
-9.60%
+1.40%
-5.00%
320' V.C. SSD 200'
PVI 7+66.76 354.66
POC 350.76
Corr = 4.40
PVC 6+06.76 352.42
PVT 9+26.76 339.90
7+23.17 351.72
℄ 0+00 Tinted Hill
High Point 6+42.45 352.71
PVI 5+50.00 351.76
Low Point 5+25 351.45
PVI 3+74.00 349.91
POC 353.42
Corr = 4.11
350 V.C. SSD 200'
PVC 2+09.00 363.31
PVI 1+38.50 368.95
PVI 0+76.00 373.95
POC 373.16
Corr = 0.79
125' V.C. SSD 200'
PVC 0+13.50 378.82
2+29.25 361.69
4+62.56 351.50
℄ 0+00 Shadowshape Place
℄ 0+00 Open Flower & Rainbow Span
℄ 6+51.3 Youngheart Lane
Match Line ℄ 9+26.76 See This Sheet
339.47
341.74
349.66
350.90
352.24
352.71
352.39
351.64
351.50
351.83
352.92
354.70
357.14
360.25
364.02
368.02
371.75
374.45
376.28
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH.	S.Y.	4410
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	4410
3	MODIFIED COMB. CURB AND GUTTER	L.F.	2740
4	CONC. SIDEWALK	L.F.	2695
5	15" CL. III RCP	L.F.	161
6	15" CL. IV RCP	L.F.	600
7	18" CL. III RCP	L.F.	272
8	21" CL III RCP	L.F.	30
9	ST'D "A-5" INLET WIDTH = 2.50'	EA	6
10	ST'D "A-10" INLET WIDTH = 2.50'	EA	2
11	ST'D "C" INLET WIDTH = 2.50'	EA	1
12	ST'D MANHOLE	EA	6
13	ST'D TYPE "M" HEADWALL	EA	1
14	CONC. PAVING (DRAINAGE DITCHES)	SY	
15	SOD - DRAINAGE DITCHES	SY	
16	RIP RAP - PAVING (DRAINAGE DITCHES)	SY	5
17	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	
18	18" CL III RCP	L.F.	32

DEPARTMENT OF PUBLIC WORKS
D. W. Weikeand 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE
MAY 26 1972

Rev Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
SANDCHAIN ROAD Sta. 0+00 to 14+00

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72

Sheet 17 of 53

F-72-85-C

CURVE DATA

P.C. 7+61.24 to P.C.C. 16+20.47
Δ=75°44'19" Tan = 505.45'
R = 650.00' Ch. = 798.02'
Arc. 859.23 Ch. Brg. = N02°50'35"W

P.C.C. 16+80.47 to ℄ Int 17+47.63
Δ=06°04'18" Tan = 63.64'
R = 1200.00' Ch. = 127.11'
Arc. = 127.16' Ch. Brg. N41°56'17"W

℄ Int 17+47.63 to P.C.C. 18+00.44
Δ=02°31'17" Tan = 26.41'
R = 1200.00' Ch. = 52.80'
Arc. = 52.81' Ch. Brg. = N37°38'29"W

P.C.C. 18+00.44 to ℄ Int 18+95.30
Δ=10°58'12" Tan = 47.57'
R = 500.00' Ch. = 94.72'
Arc. 94.86' Ch. Brg. = N30°56'45"W

℄ Int 18+95.30 to ℄ Int 20+40.89
Δ=16°40'59" Tan = 73.31'
R = 500.00' Ch. = 145.07'
Arc. 145.59' Ch. Brg. = N17°10'09"W

℄ Int 20+40.89 to P.C.C. 21+51.87
Δ=12°43'02" Tan = 55.78'
R = 500.00' Ch. = 110.75'
Arc. = 110.98' Ch. Brg. N02°28'09"W

P.C.C. 21+51.87' to ℄ Int 23+29.82
Δ=08°29'48" Tan 89.14'
R = 1200.00' Ch. = 177.79'
Arc. 177.98' Ch Brg. N08°08'16"E

℄ Int 23+29.82 to ℄ Int 23+76.79
Δ=02°14'34" Tan = 23.49'
R = 1200.00' ch. 46.97'
Arc. = 46.97' Ch. Brg. N 13°30'27"E

℄ Int 23+76.79 to P.T. 24+28.60
Δ=02°28'26" Tan = 25.91'
R = 1200.00' Ch. = 51.81'
Arc. = 51.81' Ch. Brg N 15°51'57"E

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	INV. OUT	LOCATION
I-61	Std. 'A-10' Inlet, width = 4.5'	312.11	305.20	℄ Inlet 16.00' Left of ℄ Sta. 15+27.5
I-62	Std. 'A-5' Inlet, width = 2.5'	312.11	308.30	℄ Inlet 15.92' Right of ℄ Sta. 15+27.5
I-63	Std. 'A-5' Inlet, width = 4.5'	313.47	307.15	℄ Inlet 16.00' Left of ℄ Sta. 16+86
I-64	Std. 'A-5' Inlet, width = 2.5'	313.47	309.60	℄ Inlet 15.00' Right of ℄ Sta. 16+86
I-65	Std. 'A-5' Inlet, width = 2.5'	315.20	311.20	℄ Inlet 15.00' Left of ℄ Sta. 0+50
I-66	Std. 'A-10' Inlet, width = 2.5'	315.38	311.57	℄ Inlet 15.00' Right of ℄ Sta. 0+60
I-67	Std. 'A-5' Inlet, width = 4.0'	315.30	309.76	℄ Inlet 16.67' Left of ℄ Sta. 18+60.64
I-68	Std. 'A-5' Inlet, width = 4.0'	316.92	311.20	℄ Inlet 16.67' Left of ℄ Sta. 19+79
I-69	Std. 'A-10' Inlet, width = 2.5'	316.92	313.00	℄ Inlet 15.00' Right of ℄ Sta. 19+79
I-70	Std. 'A-10' Inlet, width = 2.5'	319.66	315.14	℄ Inlet 15.00' Left of ℄ Sta. 0+60
I-71	Std. 'A-10' Inlet, width = 2.5'	319.66	313.50	℄ Inlet 15.00' Right of ℄ Sta. 0+60
I-72	Std. 'A-5' Inlet, width = 3.5'	321.91	316.50	℄ Inlet 16.42' Left of ℄ Sta. 21+98.13
I-73	Std. 'A-10' Inlet, width = 2.5'	321.91	318.20	℄ Inlet 15.00' Right of ℄ Sta. 21+98.13
I-74	Type 'C' Inlet, See Sheet 47	321.70	318.99	℄ Inlet 35.00' Left of ℄ Sta. 21+98.13
I-75	Type 'C' Inlet, See Sheet 47	322.70	320.40	℄ Inlet 20.00' Left of ℄ Sta. 21+98.13

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	INV OUT	LOCATION
I-76	Std. 'A-5' Inlet, width = 3.5'	325.49	320.40	℄ Inlet 16.42' Left of ℄ Sta. 23+11.0
MH-11	Type 'S' Manhole, See Sheet	328.12	323.15	℄ MH 16.42' Left of ℄ Sta. 23+02.71
I-77	Std. 'A-5' Inlet, width = 2.5'	329.82	325.24	℄ Inlet 15.92' Right of ℄ Sta. 0+58
I-78	Std. 'A-10' Inlet, width = 3.5'	330.94	324.22	℄ Inlet 16.42' Left of ℄ Sta. 24+70
I-79	Std. 'A-10' Inlet, width = 3.5'	330.91	325.10	℄ Inlet 16.42' Right of ℄ Sta. 24+70
S-12	Special Endwall, See Sheet	306.60	298.70	℄ Structure 45.5' Left of ℄ Sta. 14+88
S-13	Special Headwall, See Sheet	307.60	299.10	℄ Structure 42' Right of ℄ Sta. 15+12.5

DEPARTMENT OF PUBLIC WORKS
D. M. Mekeand 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

MAY 26 1972
JWCP

Note:
For storm drain profile see sheet 42 of 53
For culvert profile see Sheet 45 of 53

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
SANDCHAIN ROAD 14+00 to 27+39.23

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

PROFILE
Scale Hor 1"=50'
Ver 1"=5'

5/25/72

W.O. 6536-2B
#61

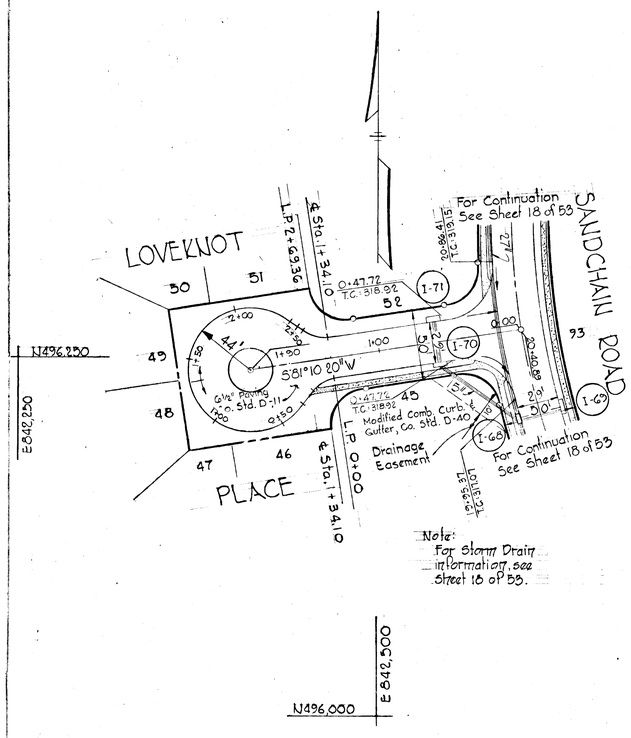
Sheet No. 18 of 53
F-72-88C

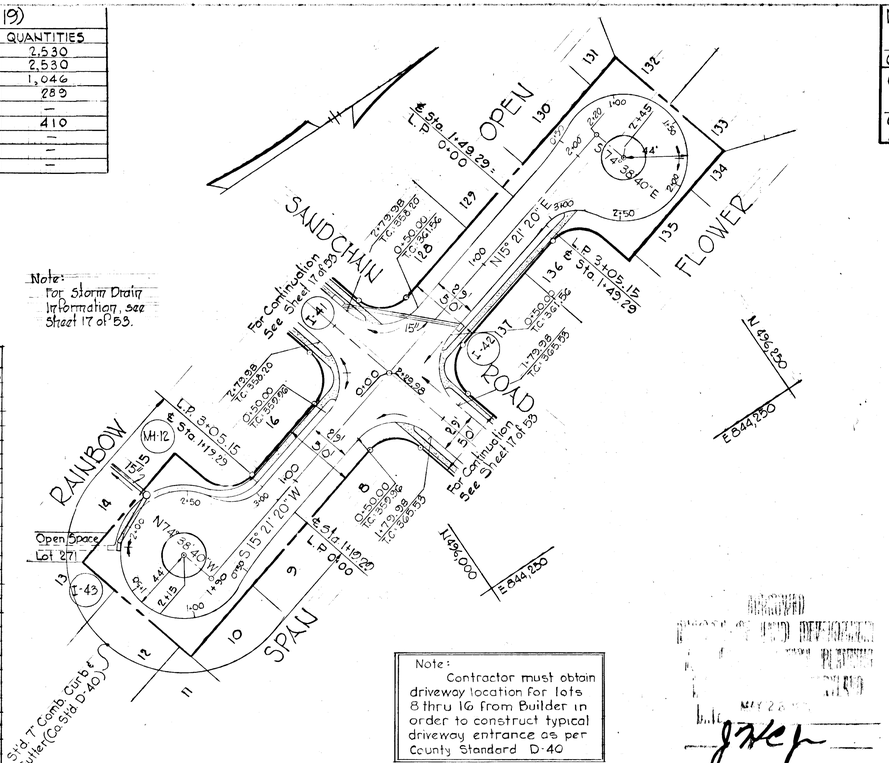
ESTIMATE OF QUANTITIES (SHEET 19)

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH	S.Y.	2,530
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	2,530
3	COMB. CURB AND GUTTER (MODIFIED)	L.F.	1,046
4	STD 'I' COMB CURB AND GUTTER	L.F.	289
5	EARTH EXCAVATION (ROADWAY)	C.Y.	—
6	CONC. SIDEWALK	L.F.	410
7	EARTH EXCAVATION (DRAINAGE DITCHES)	C.Y.	—
8	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	—
9	SOD - DRAINAGE DITCHES	S.Y.	—

ESTIMATE OF QUANTITIES (SHEET 18)

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH.	S.Y.	5,090
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	5,090
3	MODIFIED COMB. CURB AND GUTTER	L.F.	2,835
4	PLACING TOPSOIL	S.Y.	
5	EARTH EXCAVATION (ROADWAY)	C.Y.	
6	CONC. SIDEWALK	L.F.	2,835
7	15" R.C.P. CL. III	L.F.	314
8	15" R.C.P. CL. IV	L.F.	237
9	21" R.C.P. CL. III	L.F.	67
10	24" R.C.P. CL. IV	L.F.	305
11	27" R.C.P. CL. IV	L.F.	225
12	30" R.C.P. CL. IV	L.F.	300
13	33" R.C.P. CL. III	L.F.	44
14	36" R.C.P. CL. IV	L.F.	162
15	9'-9" × 6'-7" S.P.P.A.	L.F.	182
16	STD A-5 INLET WIDTH 2.5'	E.A.	4
17	STD A-5 INLET WIDTH 3.5'	E.A.	2
16	STD A-5 INLET WIDTH 4.0'	E.A.	2
18	STD A-5 INLET WIDTH 4.5'	E.A.	1
19	STD A-10 INLET WIDTH 2.5'	E.A.	5
20	STD A-10 INLET WIDTH 3.5'	E.A.	2
21	STD A-10 INLET WIDTH 4.5'	E.A.	1
22	TYPE "C" INLET	E.A.	2
23	TYPE 'B' MANHOLE	E.A.	2
24	SPECIAL ENDWALL	E.A.	1
25	SPECIAL HEADWALL	E.A.	1
26	EARTH EXCAVATION (DRAINAGE DITCH)	C.Y.	
27	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	
28	SOD-DRAINAGE DITCHES)	S.Y.	
29	RIP RAP PAVING (DRAINAGE DITCHES)	S.Y.	250





Note:
Contractor must obtain driveway location for lots 8 thru 16 from Builder in order to construct typical driveway entrance as per County Standard D-40

DEPARTMENT OF PUBLIC WORKS
K. H. McCord 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

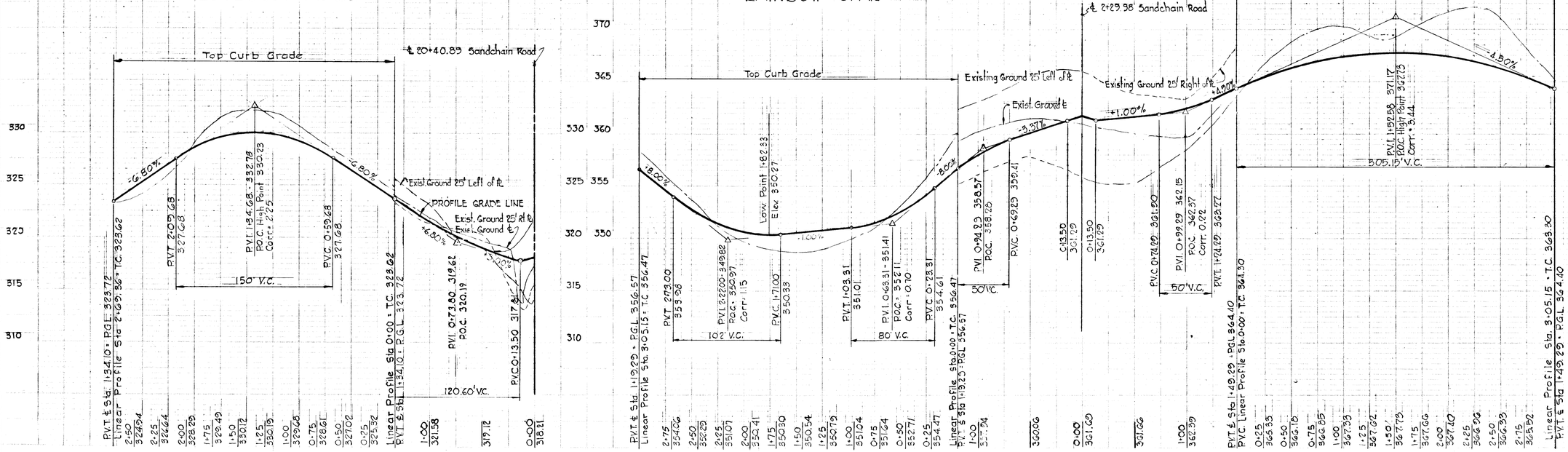
PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
OPEN FLOWER, RAINBOW SPAN AND LOVEKNOT PLACE

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974



W.O. 6836-2B
#61

5/25/72

Sheet 19 of 53
F-72-85C

TINTED HILL
LINEAR PROFILE CURVE DATA

PC 0+05.50 to PRC 0+45.56
Δ = 90°00'00" Tan = 45.50'
R = 35.50' Chd. = 36.06'
Arc = 40.06' Chd. Brg. = N 75°48'45"W

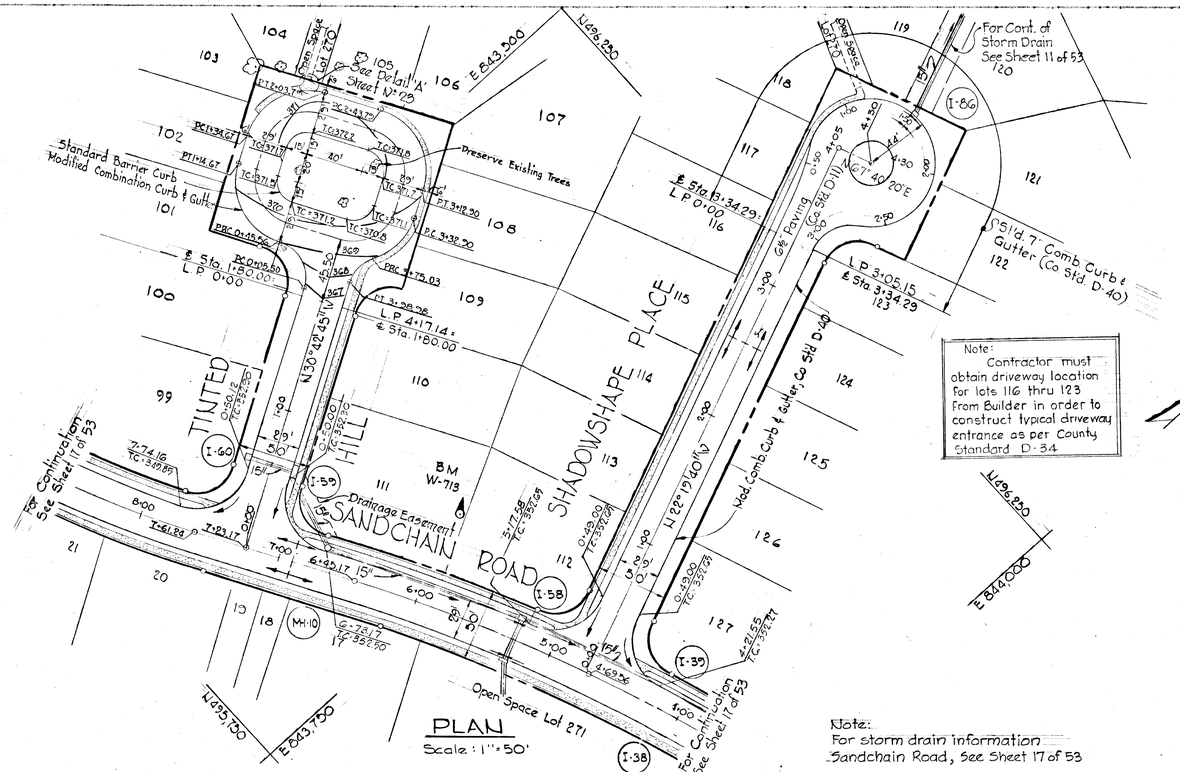
PRC 0+45.56 to P.T. 1+14.67
Δ = 90°00'00" Tan = 44.00'
R = 44.00' Chd = 62.23'
Arc = 69.11' Chd. Brg = N 75° 42'45"W

PC 1+34.67 to PT 2+03.79
Δ 90°00'00" Tan = 44.00'
R = 44.00' Chd = 62.23'
Arc 69.12' Chd. Brg: N 14°17'15"E

PC 2+43.79 to P.T. 3+12.90
Δ = 90°00'00" Tan 44.00'
R = 44.00' Chd = 62.23'
Arc = 69.12 Chd. Brg S 75°42'45" E

PC 3+32.90 to PRC 3+75.03
Δ = 54°51'45" Tan = 22.84'
R = 44.00' Chd. = 40.54'
Arc = 42.13' Chd. Brg. S 3° 16'52"E

PRC 3+75.03 to P.T. 3+88.98
Δ = 38° 38'55" Tan 12.45'
R = 35.50' Chd = 23.50'
Arc. = 23.95' Chd Brg. S 03°16'52" E



Note:
For storm drain information Sandchain Road, See Sheet 17 of 53

DEPARTMENT OF PUBLIC WORKS
D. M. Weekend 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HO. COUNTY, MARYLAND
DATE MAY 26 19[illegible]

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
SHADOWSHAPE PLACE AND TINTED HILL

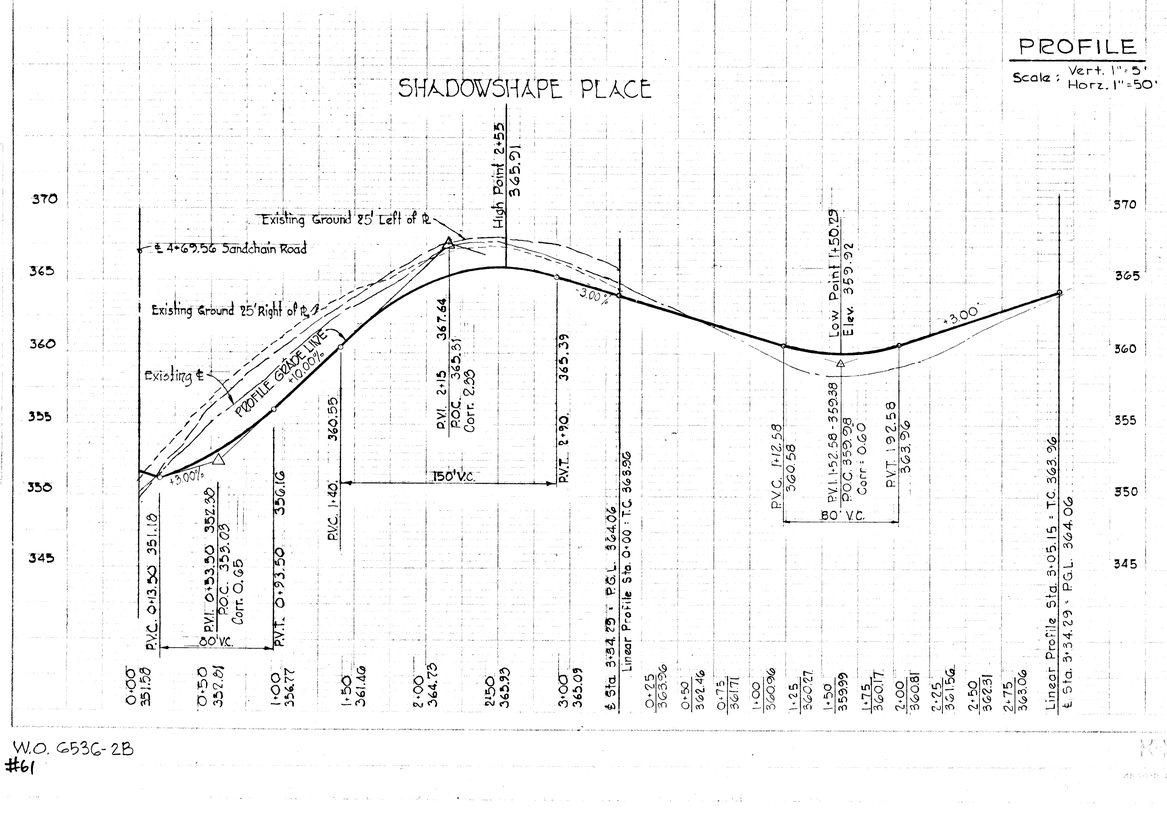
SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH.	S.Y.	2,710
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	2,710
3	MODIFIED COMB CURB AND GUTTER	L.F.	1,221
4	BARRIER CURB	L.F.	200
5	STD. 7" COMB. CURB AND GUTTER	L.F.	289
6	CONC. SIDEWALK	L.F.	760
7	EARTH EXCAVATION (DRAINAGE DITCHES	C.Y.	
8	CONC. PAVING (DRAINAGE DITCHES)	S.Y.	
9	SOD - DRAINAGE DITCHES	S.Y.	



W.O. G536-2B
#61

5/25/72

STORM DRAIN STRUCTURE SCHEDULE

№	Type	Top El	Inv Out	Location
I-112	Std. A-5 Inlet width 2.5	330.54	327.20	℄ Inlet is back 1.25' of L.P. Sta 1+03.68
MH-25	Standard Manhole	327.20	321.55	See Plan & Profile
MH-26	Standard Manhole	298.50	290.35	See Plan & Profile
S-19	Standard Type C Endwall	291.80	289.80	See Plan & Profile

* Future structure

Note
For Storm Drain information Sandchain Road, see sheet 18 of 53

DEPARTMENT OF PUBLIC WORKS
D. A. Weaver 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

RevDate	Rev.No	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

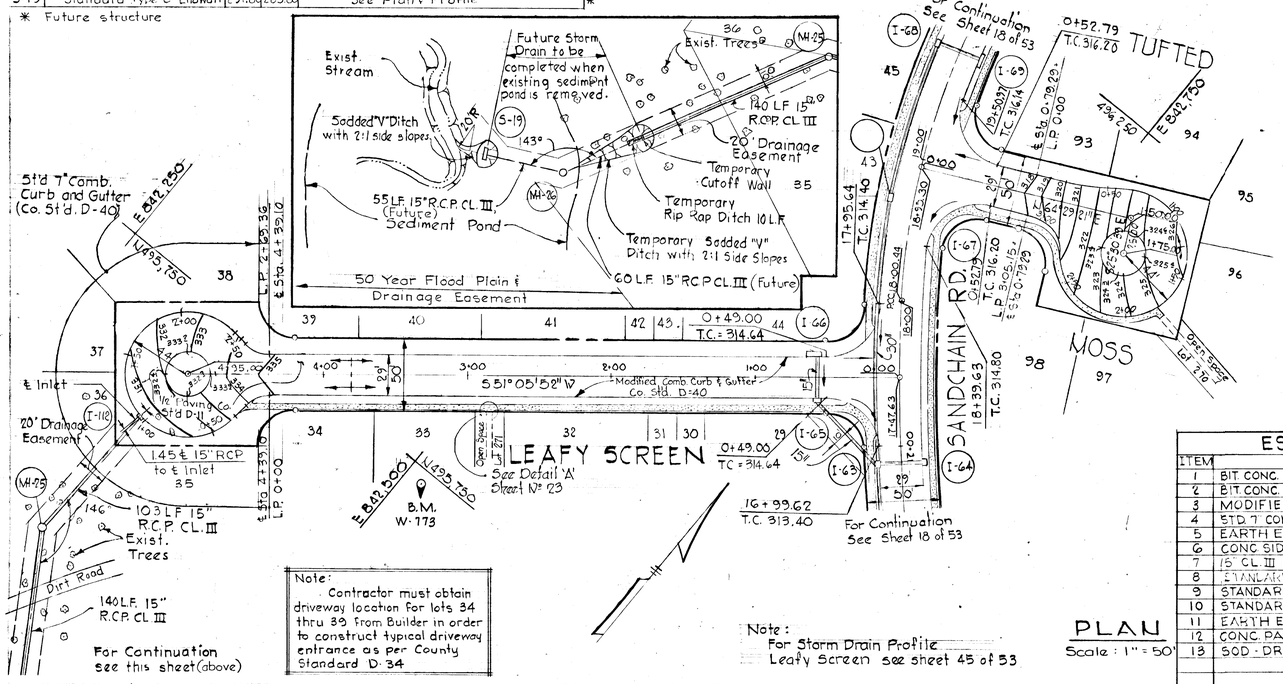
PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
LEAFY SCREEN, TUFTED MOSS AND GAY TOPAZ

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

KENNETH A. McCORD
Registered Engineer
No. 1974



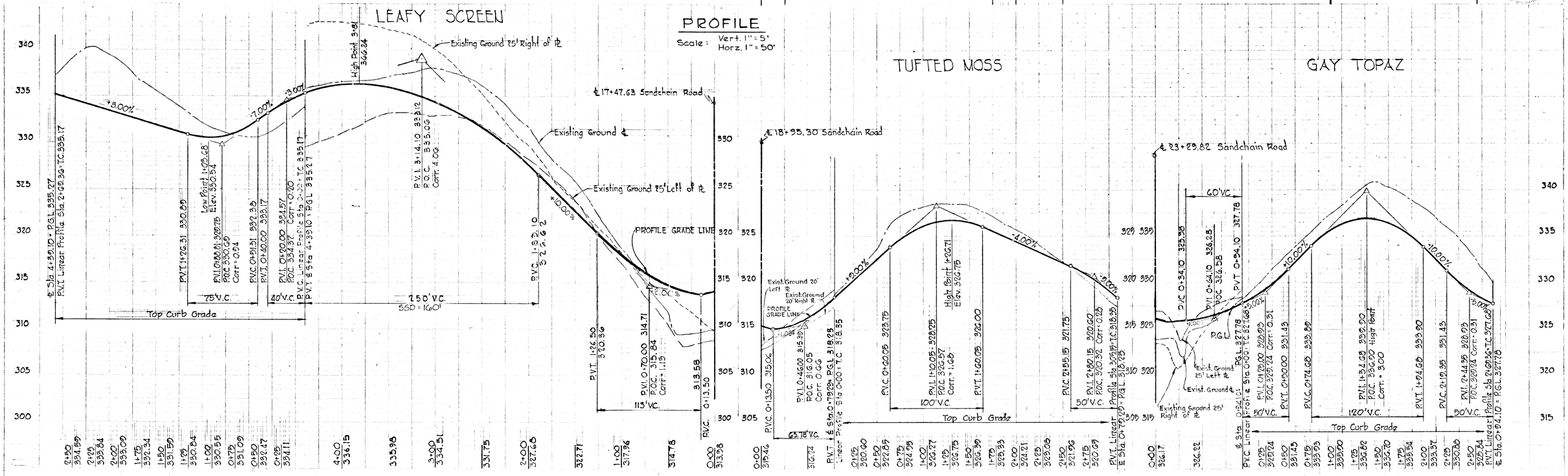
ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SUFACE COURSE 1½" TH.	S.Y.	3,040
2	BIT. CONC. BASE COURSE 5" TH.	S.Y.	3,040
3	MODIFIED COMB. CURB AND GUTTER	L.F.	1,498
4	STD. 7" COMB. CURB AND GUTTER	L.F.	252
5	EARTH EXCAVATION (ROADWAY)	C.Y.	
6	CONC. SIDEWALK	L.F.	630
7	15" CL. III R.C.P.		358
8	STANDARD A-5 INLET WIDTH 2.5'		1
9	STANDARD MANHOLE		2
10	STANDARD TYPE C ENDWALL		1
11	EARTH EXCAVATION (DRAINAGE DITCHES)		
12	CONC. PAVING (DRAINAGE DITCHES)		
13	SOD - DRAINAGE DITCHES		

PLAN
Scale: 1" = 50'

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972

PROFILE
Scale: Vert. 1" = 5'
Horz. 1" = 50'

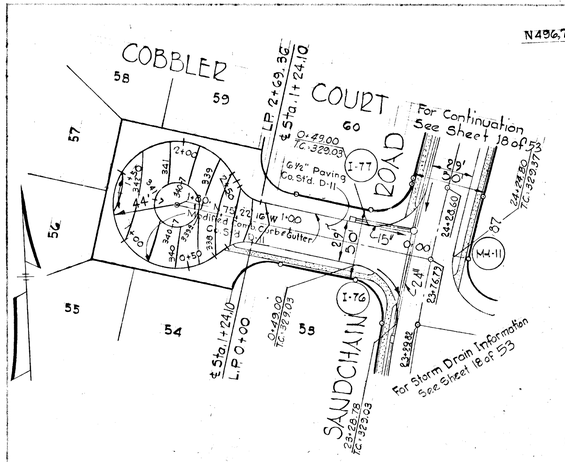


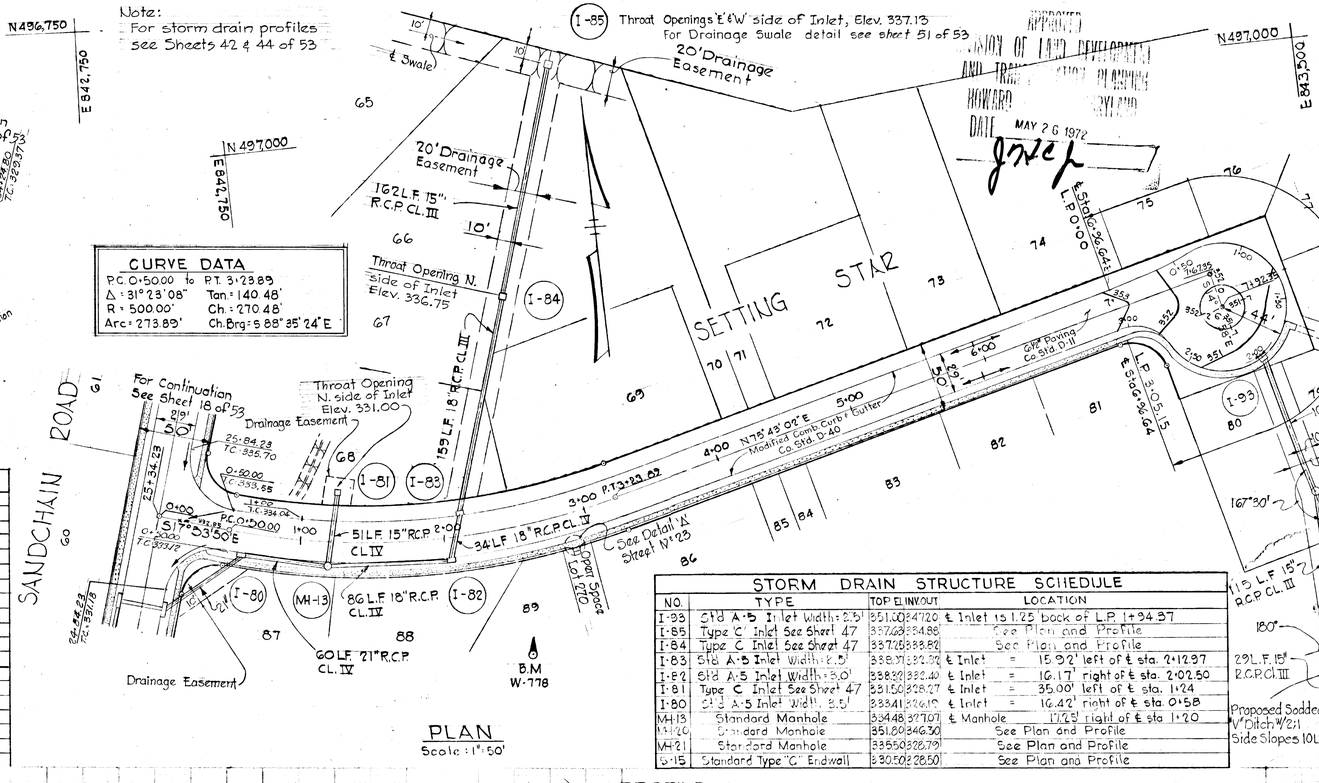
W.O. 6536-2B
#61

5/25/72

Sheet 21 of 53
F-72-85C

Note:
For storm drain profiles see Sheets 42 & 44 of 53





CURVE DATA

P.C. 0+50.00 to P.T. 3+23.89
Δ = 31° 23' 08" Tan. = 140.48'
R = 500.00' Ch. = 270.48'
Arc = 273.89' Ch. Brg. = S 88° 35' 24" E

ESTIMATE OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITIES
1	BIT. CONC. SURFACE COURSE 1½" TH	SY	3,220
2	BIT. CONC. BASE COURSE	SY	3,220
3	MODIFIED COMB CURB AND GUTTER	LF	1,701
4	15" CL. III RCP	LF	406
5	15" CL. IV RCP	LF	51
6	18" CL III RCP	LF	159
7	18" CL IV RCP	LF	120
8	21" CL IV RCP	LF	60
9	CONC. SIDEWALK	LF	875
10	ST'D "A-5" INLET WIDTH 2.50'	EA	2
11	ST'D "A-5" INLET WIDTH 3.00'	EA	1
12	ST'D "A-5" INLET WIDTH 3.50'	EA	1
13	ST'D "C" INLET	EA	3
14	ST'D MANHOLE	EA	3
15	ST'D "C" ENDWALL	EA	1
16	EARTH EXCAVATION (DRAINAGE DITCHES)	CY	28
17	STD. 7' COMB. CURB AND GUTTER	LF	289
18	SOD - DRAINAGE DITCHES	SY	17

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	INV. OUT	LOCATION
I-93	Std A-5 Inlet Width = 2.5'	351.00	347.20	℄ Inlet is 1.25' back of L.P. 1+94.37
I-85	Type 'C' Inlet See Sheet 47	337.63	334.86	See Plan and Profile
I-84	Type 'C' Inlet See Sheet 47	337.15	333.82	See Plan and Profile
I-83	Std A-5 Inlet Width = 2.5'	338.71	332.30	℄ Inlet = 15.92' left of ℄ sta. 2+12.97
I-82	Std A-5 Inlet Width = 3.0'	338.30	332.40	℄ Inlet = 16.17' right of ℄ sta. 2+02.50
I-81	Type 'C' Inlet See Sheet 47	331.50	328.27	℄ Inlet = 35.00' left of ℄ sta. 1+24
I-80	Std A-5 Inlet Width = 3.5'	333.41	326.15	℄ Inlet = 16.42' right of ℄ sta. 0+58
MH-13	Standard Manhole	334.48	327.07	℄ Manhole = 17.25' right of ℄ sta. 1+20
MH-20	Standard Manhole	351.80	346.30	See Plan and Profile
MH-21	Standard Manhole	336.50	328.79	See Plan and Profile
S-15	Standard Type "C" Endwall	330.50	328.50	See Plan and Profile

PLAN
Scale: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 5/30/72

OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING — DATE

APPROVED
DEPARTMENT OF LAND DEVELOPMENT AND TRANSPORTATION OF HOWARD COUNTY, MARYLAND
DATE MAY 26 1972

Note:
Contractor must obtain driveway location for lots 75 thru 80 from Builder in order to construct typical driveway entrance as per Co. Std. D-34

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
PLAN AND PROFILE
COBBLER COURT AND SETTING STAR

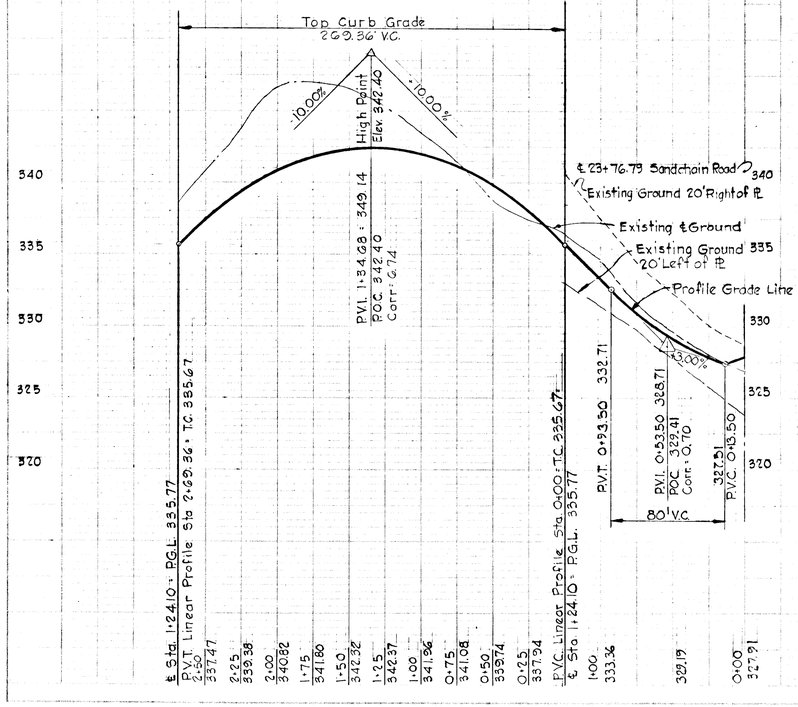
SCALE: As Shown — DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

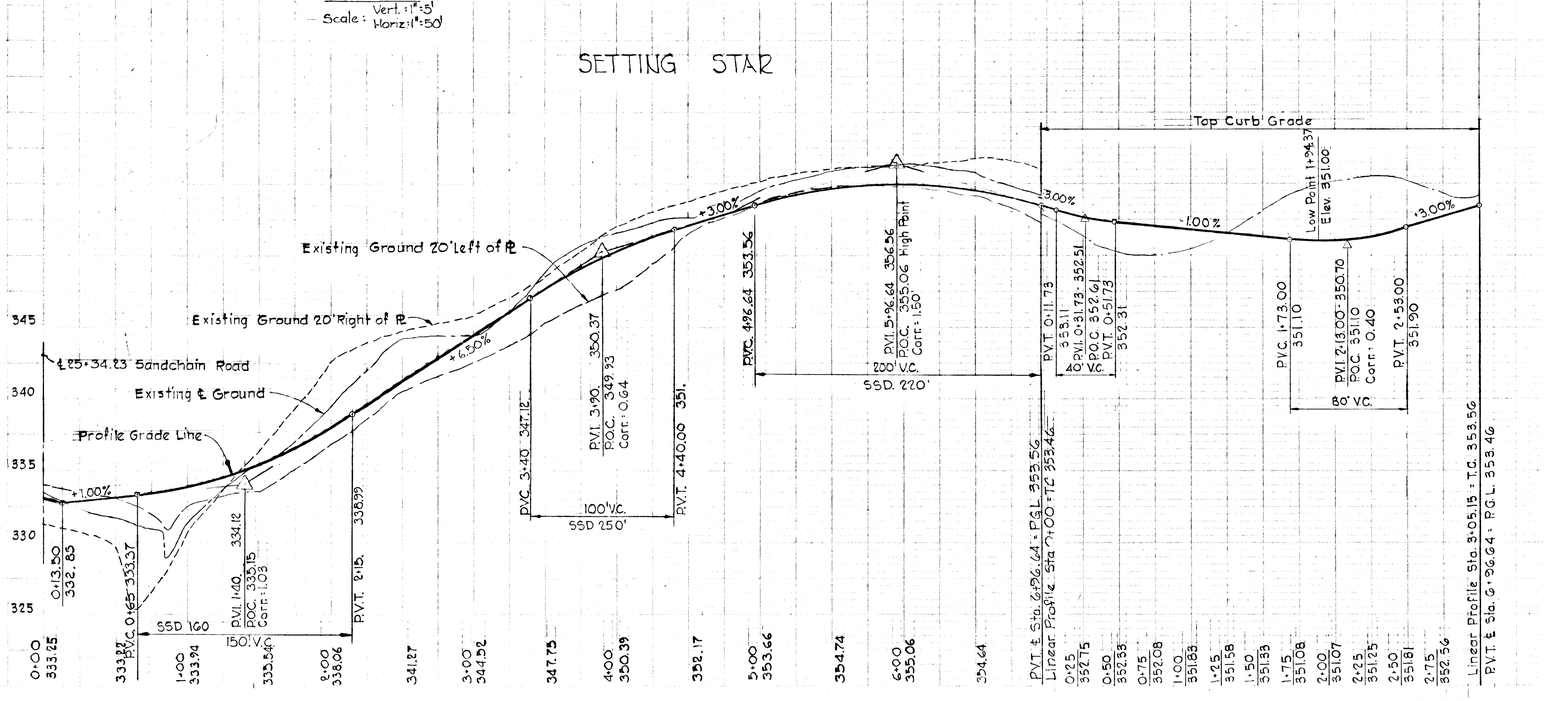
KENNETH A. McCORD
Registered Engineer
No. 1974

COBBLER COURT PROFILE

Scale: Vert. 1" = 5'
Horiz. 1" = 50'



SETTING STAR

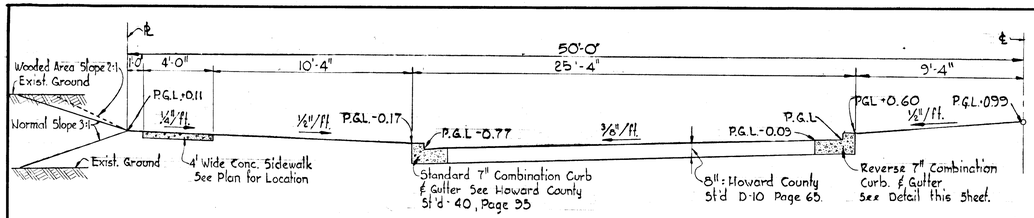


W.O. G536-2B
#61

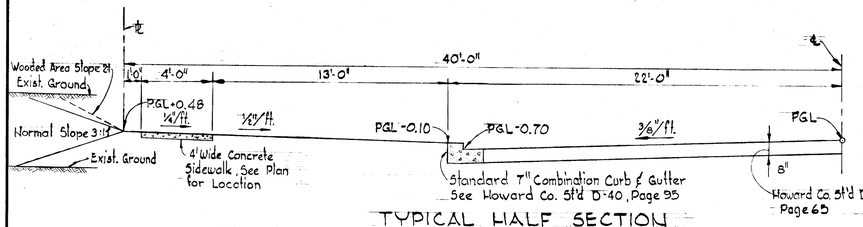
5/25/72

Sheet 22 of 53

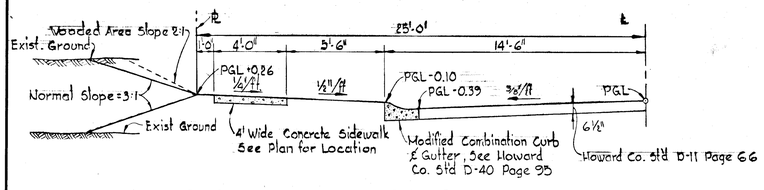
F-72-85C



TYPICAL HALF SECTION
100' R/W TWO 25'-4" ROADWAYS
Scale: 1/4" = 1'-0"

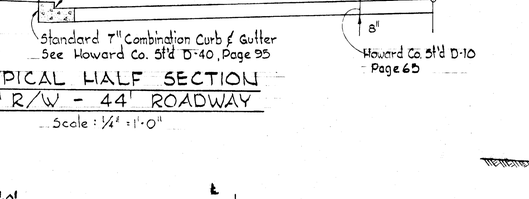


TYPICAL HALF SECTION
80' R/W - 44' ROADWAY
Scale: 1/4" = 1'-0"

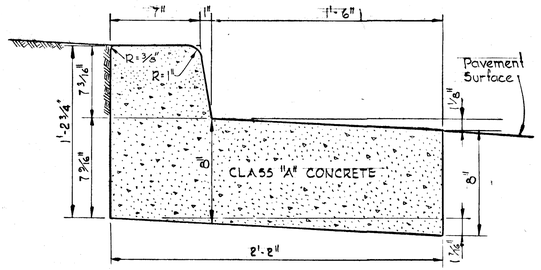


TYPICAL HALF SECTION
50' R/W - 29' ROADWAY
Scale: 1/4" = 1'-0"

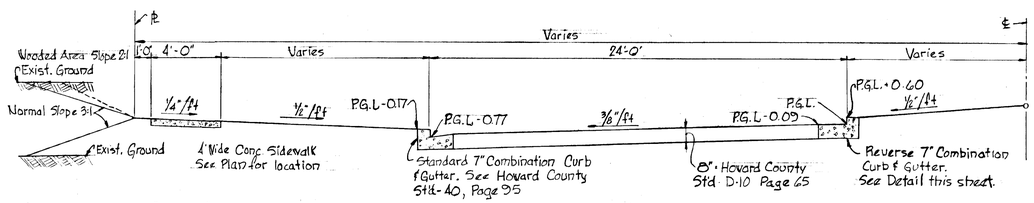
EMERGENCY ACCESS ROAD FROM STEVENS FOREST ROAD TO SANDCHAIN ROAD
Not to Scale



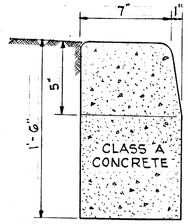
DETAIL 'A'
DETAIL 'B'



REVERSE 7" COMBINATION CURB & GUTTER
No Scale

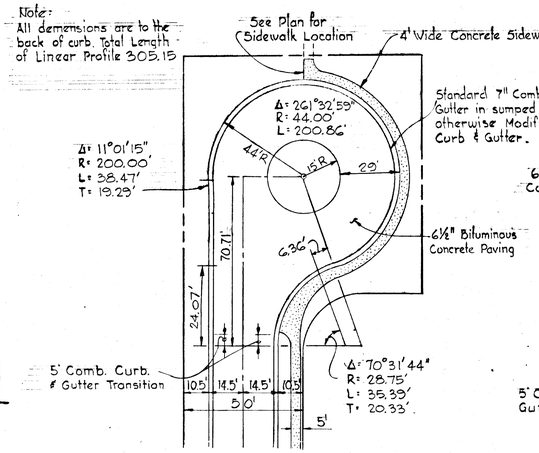


TYPICAL HALF SECTION
CRADLEROCK WAY STA. 5+00 to STA. 11+25
Scale: 1/4" = 1'-0"

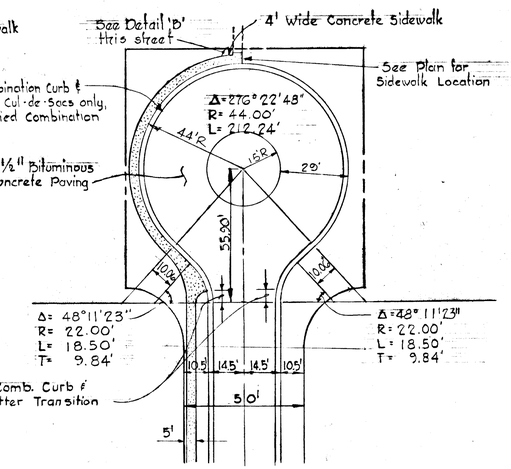


STANDARD BARRIER CURB
No Scale

Note:
All dimensions are to the back of curb. Total Length of Linear Profile 305.15

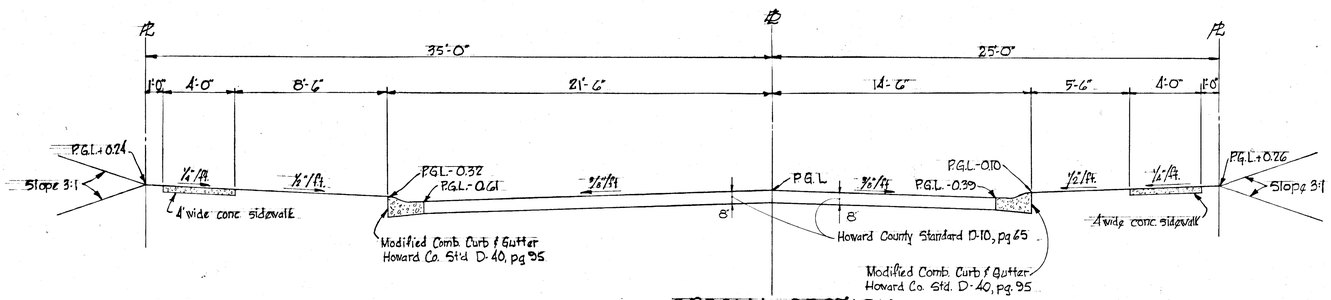


Note:
All dimensions are to the back of curb Total length of Linear Profile 263.36

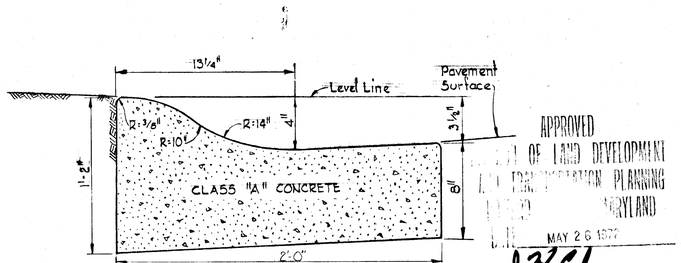


TYPICAL OFFSET CUL-DE-SAC DETAIL
Scale: 1" = 30'

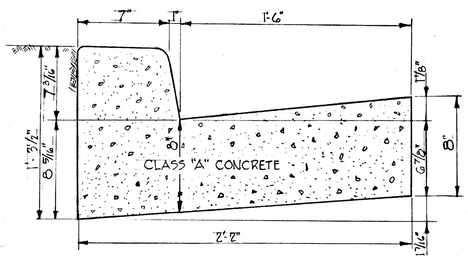
TYPICAL CUL-DE-SAC DETAIL
Scale 1" = 30'



SPECIAL SECTION
YOUNGHEART LANE
STA. 0+00 to STA 6+31.30
Scale: 1/4" = 1'-0"



MODIFIED COMBINATION CURB & GUTTER
NO SCALE



STANDARD 7" COMBINATION CURB & GUTTER
No Scale

APPROVED
OFFICE OF LAND DEVELOPMENT
AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE: MAY 26 1972
jwcf

DEPARTMENT OF PUBLIC WORKS
D. W. Weiland 5/30/72
CHIEF, BUREAU OF HIGHWAYS — DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING — DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
ROADWAY DETAILS

SCALE: AS Shown — DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O 6536-2B
#161

5/25/72 — SHEET 23 OF 53

F-72-85C

DEPARTMENT OF PUBLIC WORKS

D. H. Hurlard 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
MAY 26 1972

BRIDGE AND BRIDGE CHANNEL SITE PLAN
CRADLEROCK WAY
Scale: 1"=10'

℄ BRIDGE CHANNEL CURVE DATA

CURVE No. 1
P.C. 0+29 to P.T. 0+94.45
Δ = 37° 30' 00
R = 100.00'
Arc = 65.45'
Tan = 33.94'
Ch = 64.29'
Ch.Brg = N 13° 14' 31" E

CURVE No. 2
P.C. 2+02 to 2+37.60
Δ = 25° 30' 00"
R = 80.00'
Arc = 35.60'
Tan = 18.10
Ch = 35.31
Ch.Brg = N 07° 05' 28" E

CURVE No. 3
P.C. 2+46.70 to P.T. 2+79.69
Δ = 31° 30' 00"
R = 60.00'
Arc = 35.60
Tan = 18.32
Ch = 32.57
Ch.Brg = N 04° 05' 29" E

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COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
BRIDGE - SITE PLAN

Scale: As Shown Date:

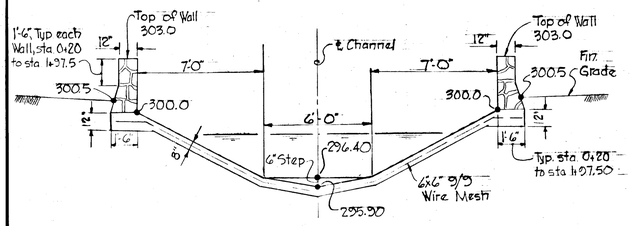
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

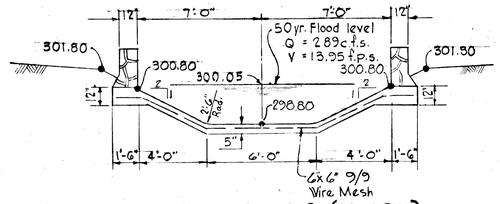
5/25/72

SHEET 24 OF 53 F-72-85C



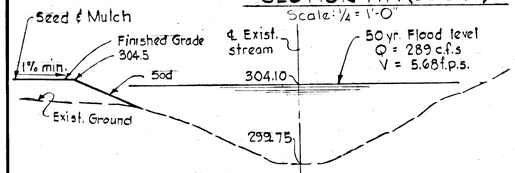
SECTION A-A (sta 0+20)

Scale: 1/4" = 1'-0"



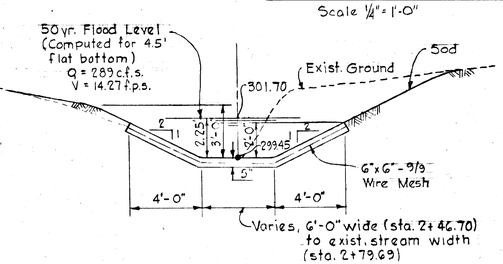
SECTION C-C (Sta. 1+97.5)

Scale 1/4" = 1'-0"



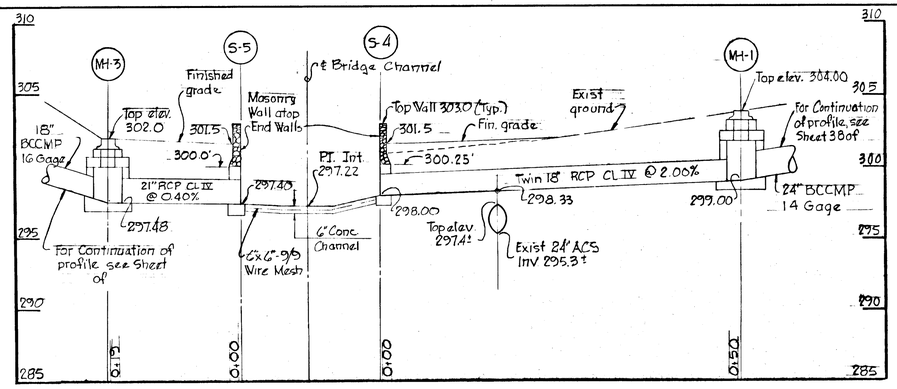
SECTION G-G

Scale 1/4" = 1'-0"



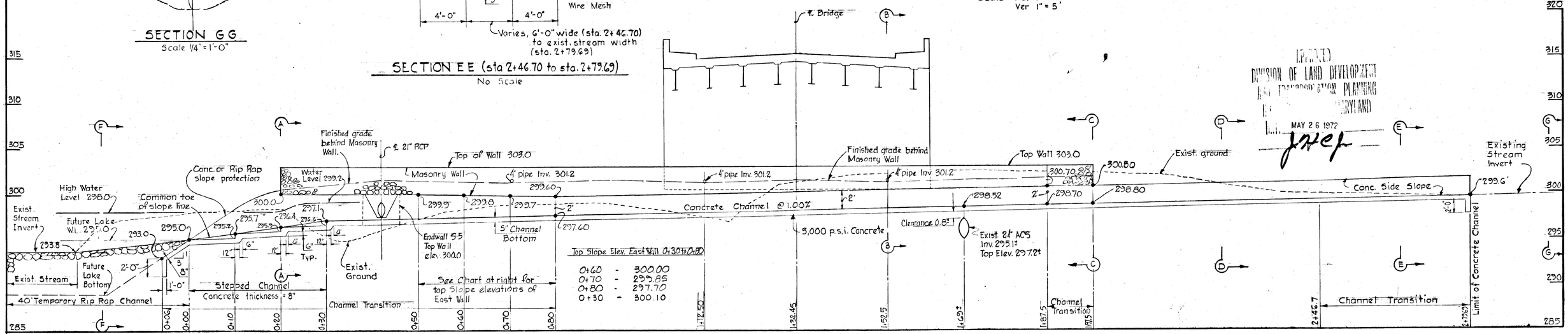
SECTION E-E (sta 2+46.70 to sta. 2+79.69)

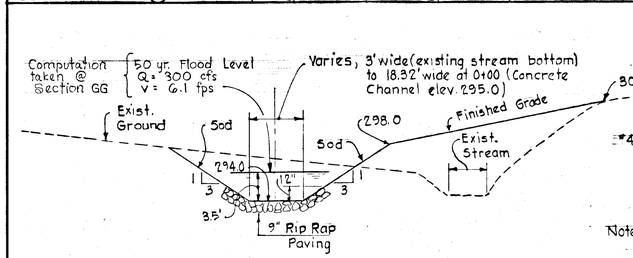
No Scale



PROFILE

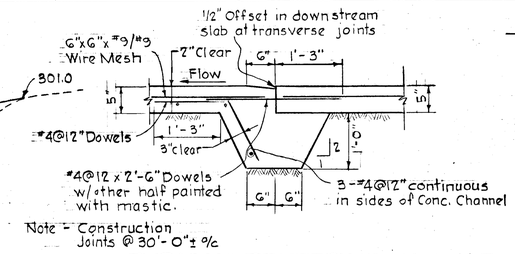
Scale: Hor. 1" = 10'
Ver. 1" = 5'





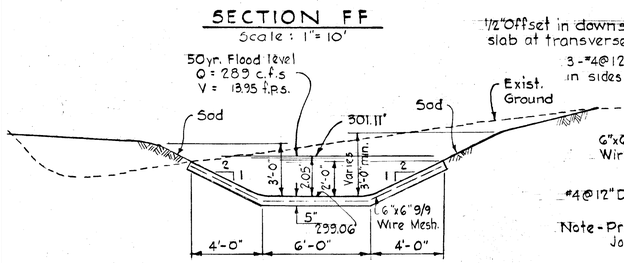
SECTION F-F

Scale: 1" = 10'



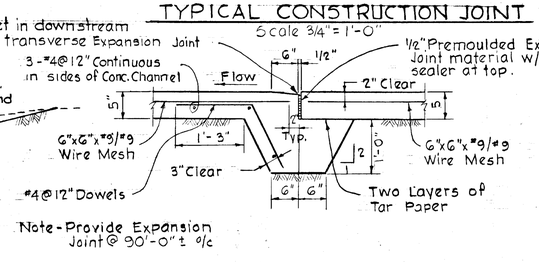
TYPICAL CONSTRUCTION JOINT

Scale 3/4" = 1'-0"



SECTION D-D (sta. 1+97.5 to sta. 2+46.7)

No Scale

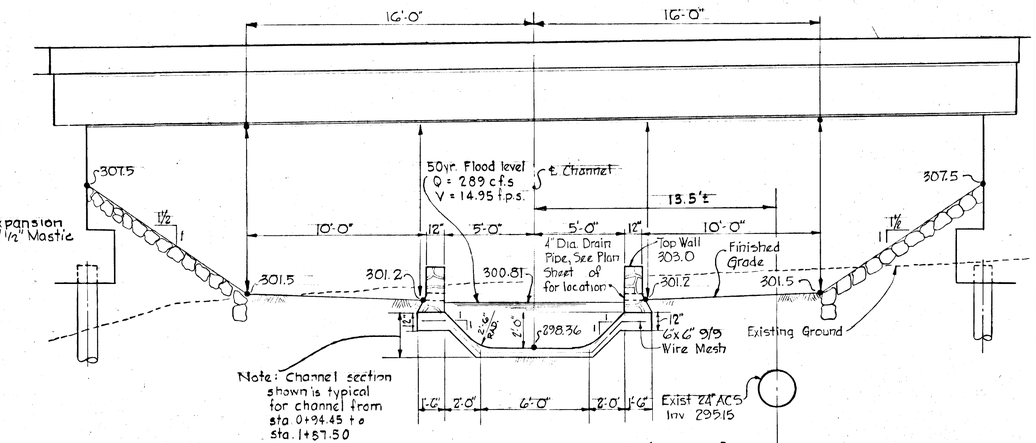


TYPICAL EXPANSION JOINT

Scale 3/4" = 1'-0"

PROFILE BRIDGE CHANNEL

Scale: Hor. 1" = 10'
Ver. 1" = 5'



SECTION B-B (Sta: 1+52.5)

Scale: 1/4" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
G. M. Rutland 5/30/72
CHIEF, BUREAU OF HIGHWAYS — DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING — DATE

(APPROVED)
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
MAY 26 1972
jwep

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
BRIDGE - SITE DETAILS

Scale: As Shown — Date

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

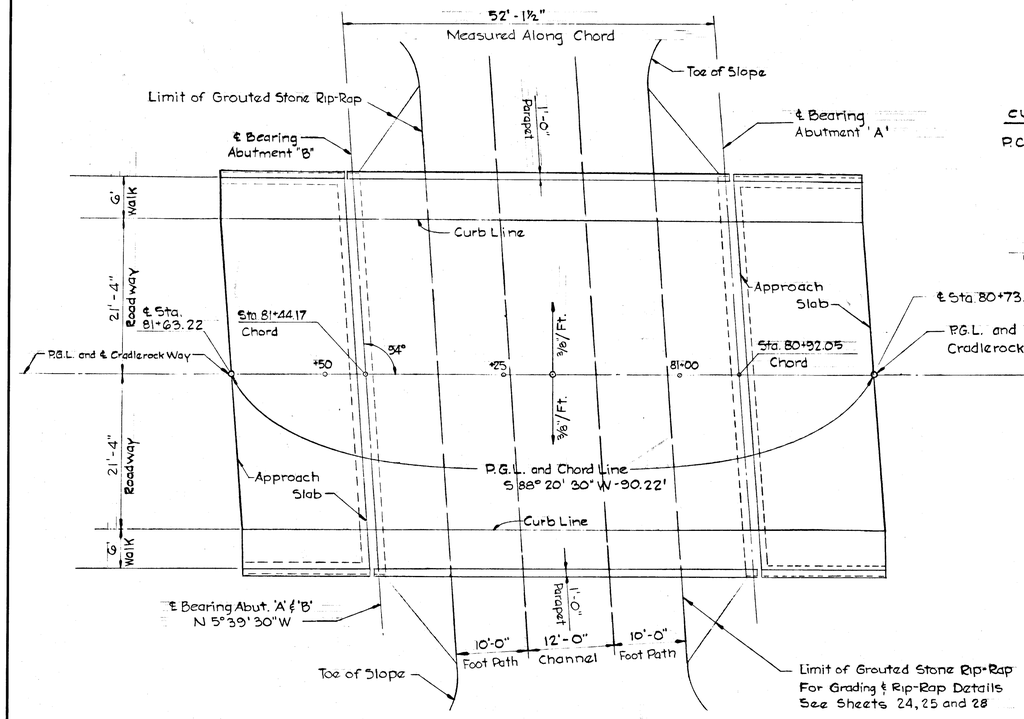
W.O. 653G-2D
#61

5/25/72

F-72-85C

NOTE:
Between ℄ Stations 80+73.00 and 81+63.22, the chord and arc lengths are equal.

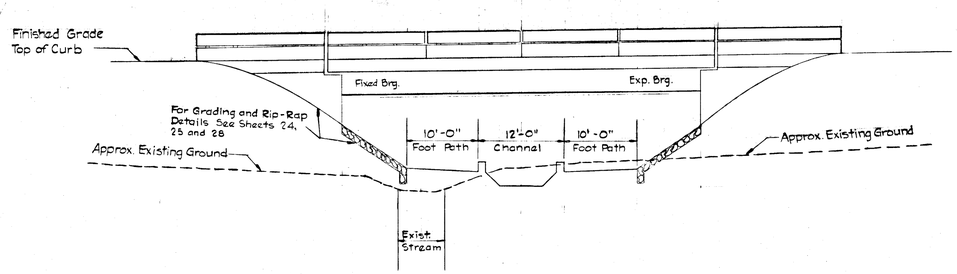
Bench Mark



PLAN
Scale: 1" = 10'

CURVE DATA ℄ CRADLEROCK WAY

P.C.C. 77+87.25 to P.R.C. 89+31.61
Δ = 18°44'00"
R = 3,500.00'
L = 1,144.36'
T = 577.33'
Ch. = 1,139.26'
Ch. Brg. = N 87°42'28" W



ELEVATION
Scale: 1" = 10'

DEPARTMENT OF PUBLIC WORKS
D. A. McLeod 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

* and as amended by 1970 & 1971 Interim Specifications

GENERAL NOTES

Specifications — S.R.C. Specifications and Errata to Specifications dated March 1968 and Special Provisions for Materials and Construction. A.A.S.H.O. Standard Specifications for Highway Bridges dated 1969 for design. For reinforced concrete design, f_c=1200 lbs. per sq. in., except that the concrete in bridge deck slabs supported by steel beams has an f_c=1050 lbs. per sq. in.

Loading — HS 20-44, with provision for future 2" wearing surface.

Concrete — Class A-1 Concrete shall have a minimum compressive strength of 3000 lbs. per sq. in. at 28 days. See Special Provisions.

Chamfer — All exposed corners of concrete shall be chamfered 3/4"x3/4" with milled chamfer strips.

Reinforcing — Reinforcing Steel shall conform to A.S.T.M. Designation A-615 Grade 40. All splices shall be lapped a minimum of 24 bar diameters unless otherwise noted.

Minimum cover for any bar shall be 2" unless otherwise noted.

Structural Steel — Structural Steel shall be A.S.T.M. Designation A-36. See Special Provisions.

Timber Bridge Rail — Lumber for Bridge Rail shall be Select Structural Douglas Fir "1,900f", salt treated in accordance with the Standard Specifications to retain a minimum of .55 p.c.f. of Welman Salt (Tanalith).

Keys — All keys in concrete construction joints shall be nominal timber sizes.

SPECIAL PROVISIONS

ARTICLE 34.08 CEMENT CONCRETE STRUCTURES

34.08-2 Materials

Section 34.08-2 of the Specifications is amended to add:

All concrete in the bridge and approach slabs shall be Class A-1 Concrete.

34-08.3 Construction Methods.

Section 34.08-3 of the Specifications is amended to add:

Contractor's attention is directed to the fact that the bridge has no bituminous concrete wearing surface and that the top of the concrete slab bridge deck will be the riding surface of the bridge. In order to have the top of the concrete slab bridge deck be true to planned line and grade of the roadway, the Contractor shall take all necessary precautions, including a check on all bridge seat elevations, as the last order of work before setting ste and shall make any adjustments dictated by the results of this check of the bridge seats. T after the structural steel is set, an accurate set of elevations shall be run on tops of all th steel beams at 1/4 points, so that computations may be made by the Contractor (which sh approved by the Engineer) to set screed strips at proper elevations to produce a finished concrete bridge deck that will be true to "as planned" line and grade of the roadway sur The Contractor is solely responsible for meeting the provisions specified above.

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ARTICLE 34.07 - METAL STRUCTURE

34.07-3 Construction Methods.

Section 34.07-3, Paragraph 65, is applicable in its entirety except that the third and final field coat shall be selected by the Owner.

ARTICLE 34.65 PILING

Materials:

Shells or casings for all cast-in-place concrete piles shall be of steel, conforming to the requirements of the Plans and Specifications and meeting with the approval of the Engineer.

The shells or casings shall be tapered and shall have a minimum thickness of No. 7 gauge (0.1793"). They shall have a nominal diameter of twelve inches at point of cut-off; and in cases where they extend above the original ground line, they shall have a nominal diameter of twelve inches at original ground line also. The diameter at the tip shall be not less than eight inches.

Should the driving of the test piles indicate that a thicker shell is necessary to obtain the penetration required without failure during driving, such required thickness shall be provided.

Steel reinforcement shall conform to the requirements of the Specifications and shall be Intermediate Grade.

Concrete for filling the shells or casings shall be Class A-1 concrete. Cement shall be Type I.

Construction Methods:

The Contractor's attention is directed to the provisions of the Specificati ons for the driving and test loading of certain piles which have been designated on the Plans as "Test Piles". The purpose of these test piles and the pile load tests is to establish a proper driving criteria for the permanent piles and to enable the Contractor to predetermine approximate casing lengths for the permanent piles.

No pile casings shall be driven for Abutments until the preliminary embankment has been completed to one foot above the elevation of the bottom of the abutment footing and has been approved by the Engineer.

No pile casings shall be driven for piers until the excavation for that particular pier has been completed and approved by the Engineer.

Casings shall be fabricated using sections of maximum practicable length. Where splices are necessary, they shall be constructed as indicated on the Plans, or as otherwise directed by the Engineer. All welding shall conform to the requirements of the current "Specifications for Welded Highway and Railway Bridges" of the American Welding Society, except as otherwise specified in the latest Errata and Addenda to the Specifications.

All test pile casings shall be driven to a safe bearing capacity of fifty-one tons. This safe bearing capacity will be based on the appropriate formula of the Specifications and will be determined by the Engineer.

If directed by the Engineer, one or more of the test piles shall be load tested to eighty-four tons. All load testing shall be performed in accordance with the requirements of the Specifications.

If, in the opinion of the Engineer, the test pile casings are found to be in a satisfactory condition after driving and at the conclusion of the load tests, if performed, they shall be cut off to proper elevation, reinforced, filled with concrete and used as permanent piles. Should the Engineer declare any casing unsuitable as a permanent pile, it shall be withdrawn and replaced by a new casing.

All permanent pile casings shall be driven to a safe bearing capacity of fifty-one tons. This safe bearing capacity will be based on the appropriate formula of the Specifications and on the results of the above mentioned pile load tests, if performed, and will be determined by the Engineer.

All pile casings, including test pile casings, shall be driven to such penetration that the casings will have the minimum nominal diameter at point of cut-off and at original ground line, as specified above. Should the penetration per blow indicate that the previously specified safe bearing capacity has been attained before the required penetration has been reached, the pile casings shall, nevertheless, be driven to the required penetration using such methods as are approved by the Engineer.

Piles will not be required to be painted.

Jetting of the piles will not be permitted.

Method of Measurement and Basis of Payment:

Measurement and payment for these items will be in accordance with the provisions of the Specifications.

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972
JWeb

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
BRIDGE - PLAN AND ELEVATION

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

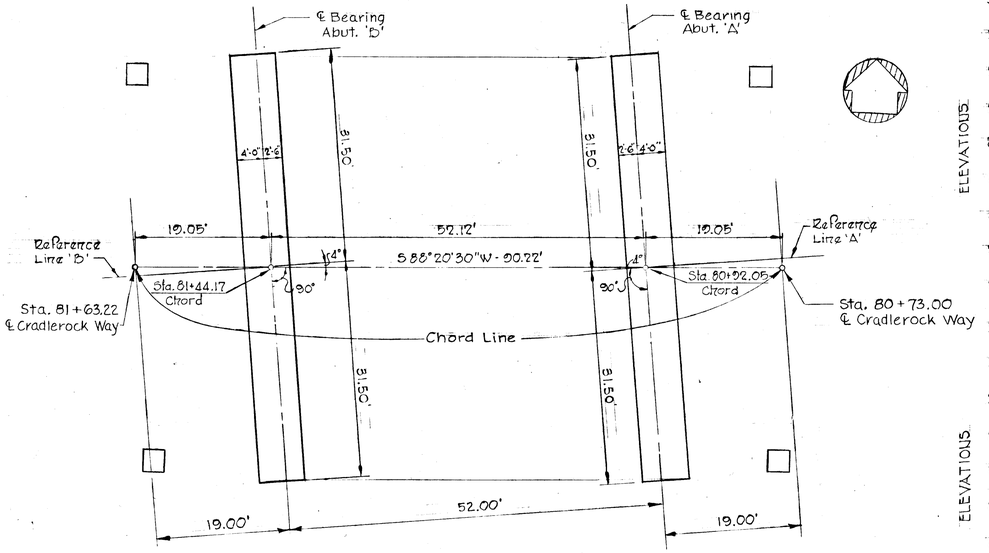
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72

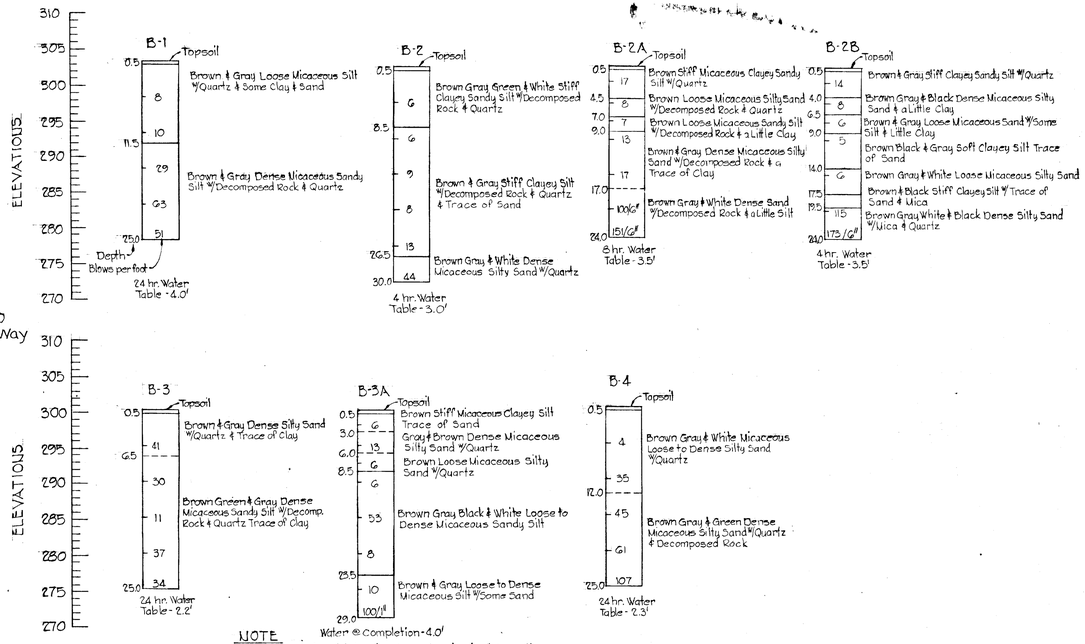
SHEET 26 OF 53

F-72-85C



SUBSTRUCTURE LAYOUT

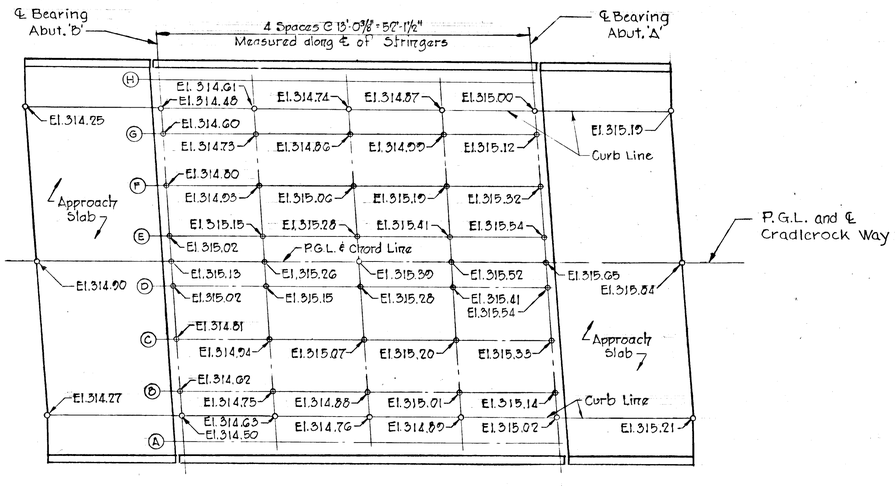
Scale: 1"= 10'



NOTE
Blow counts obtained using Standard 2" Sampling Spoon on a 140 pound weight dropped 30".

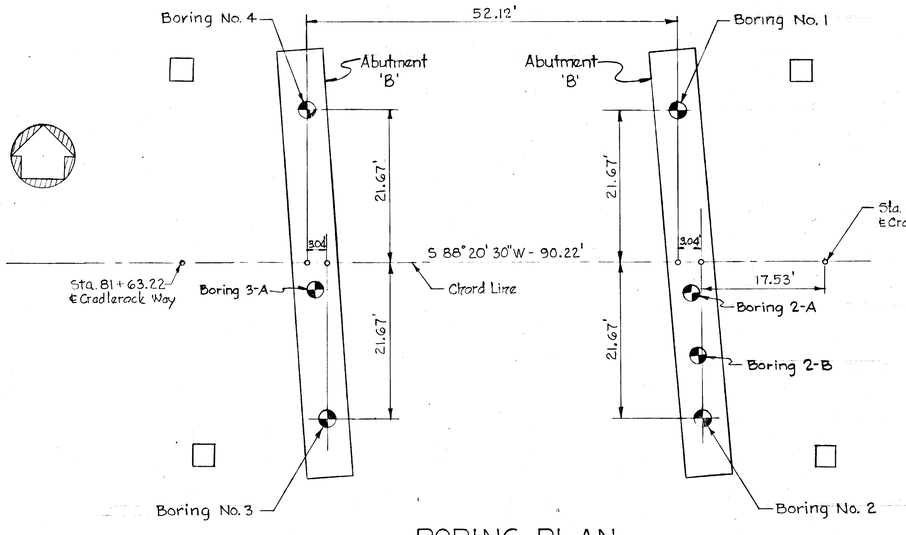
BORING LOGS

Scale: 1" = 10'



FINISHED GRADE ELEVATIONS

Scale: 1" = 10'



BORING PLAN

Scale: 1" = 10'

DEPARTMENT OF PUBLIC WORKS
D. M. Mercer 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972

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COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
BRIDGE - SUBSTRUCTURE LAYOUT AND FINISHED GRADE ELEVATIONS

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

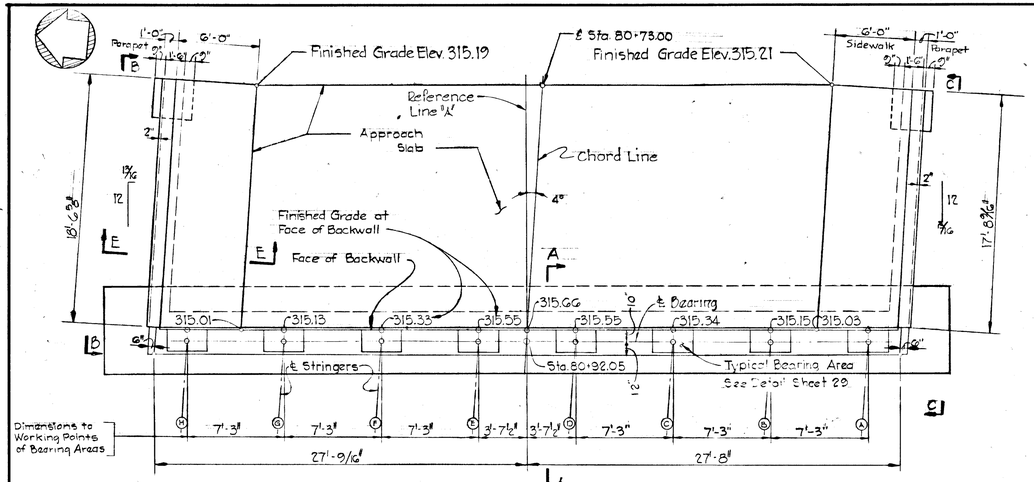
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72

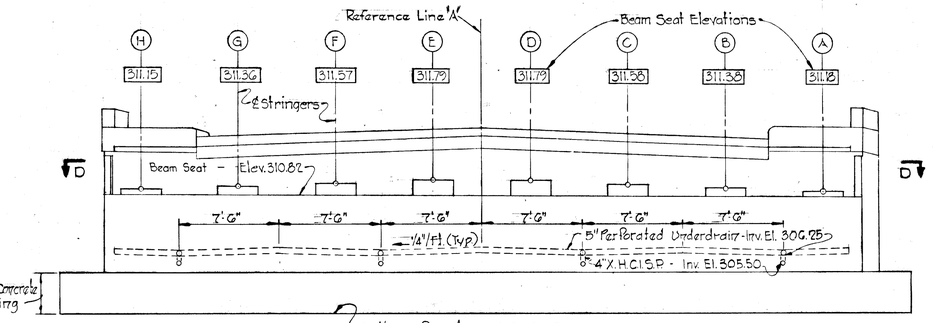
SHEET 27 OF 53

F-72-85C



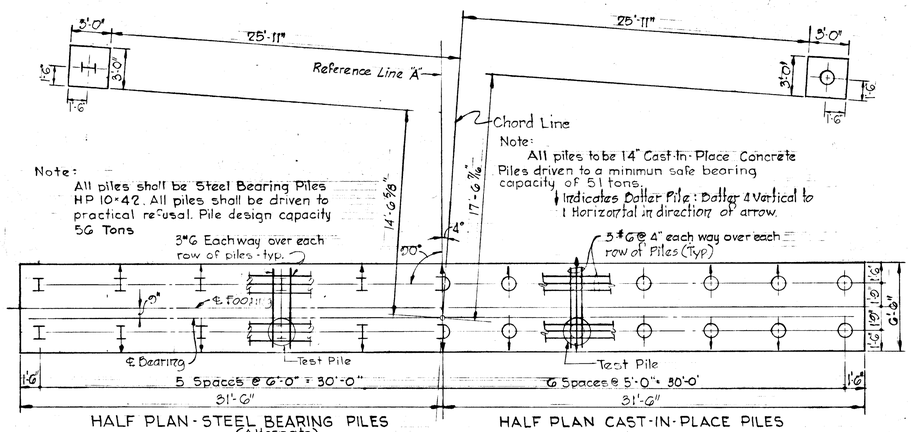
PLAN - ABUTMENT 'A'

Scale: 3/16" = 1'-0"



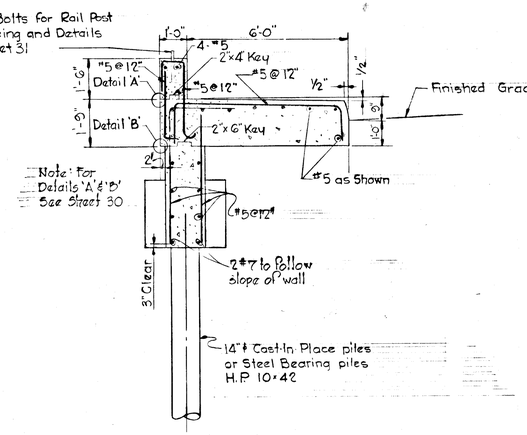
ELEVATION - ABUTMENT 'A'

Scale: 3/16" = 1'-0"



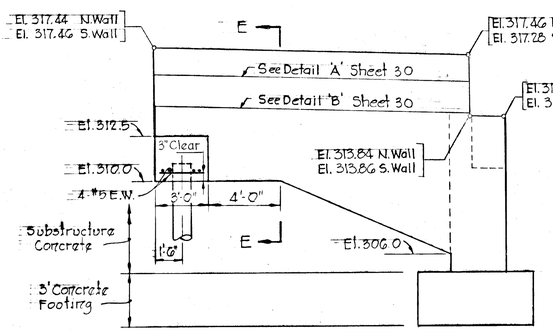
FOOTING PLAN - ABUTMENT 'A'

Scale: 3/16" = 1'-0"



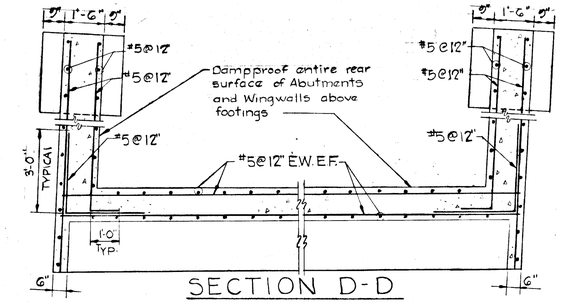
SECTION E-E

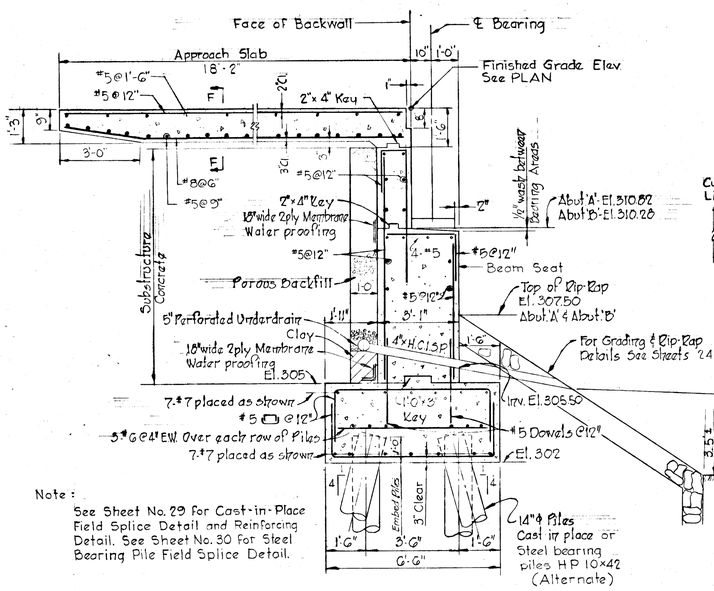
Scale 3/8" = 1'-0"



SECTION B-B (SHOWN)
SECTION C-C (SIMILAR)

Scale: ¼" = 1'-0"

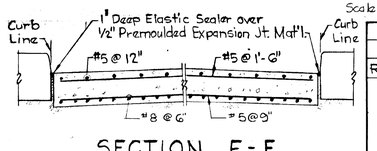




Note:
See Sheet No. 29 for Cast-in-Place Field Splice Detail and Reinforcing Detail. See Sheet No. 30 for Steel Bearing Pile Field Splice Detail.

SECTION A-A

Scale: 3/8" = 1'-0"



SECTION F-F

Scale: 3/8" = 1'-0"

APPROVED
CHIEF, BUREAU OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
MAY 26 1972

DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 5/30/72

OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING — DATE

Rev. Date	Rev. No	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
BRIDGE - ABUTMENT 'A'

Scale: As Shown — Date:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

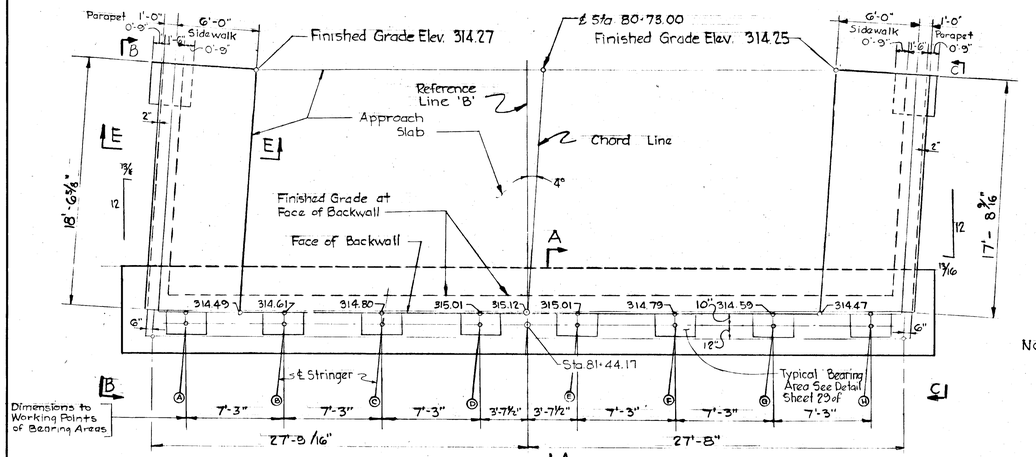
5/25/72

F-72-85c

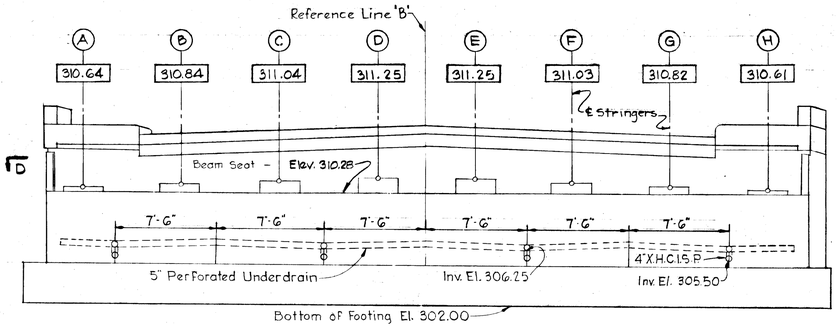
DEPARTMENT OF PUBLIC WORKS
D. M. Mellerand 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

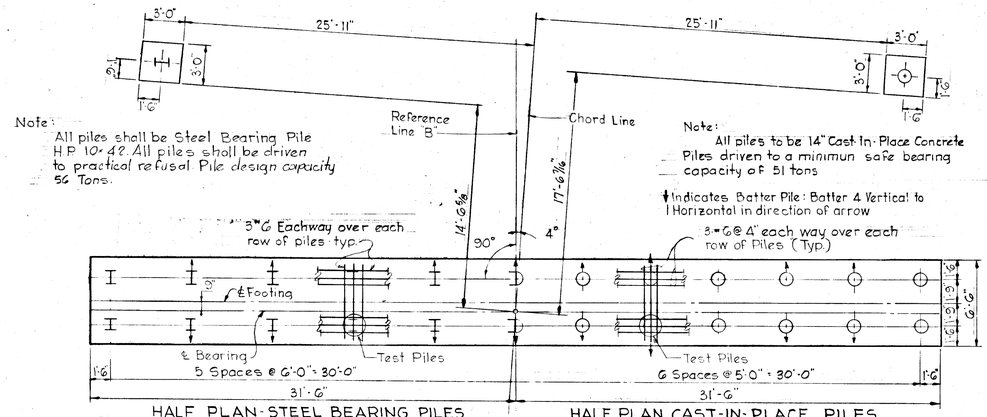
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE



PLAN - ABUTMENT 'B'
Scale: 3/16" = 1'-0"

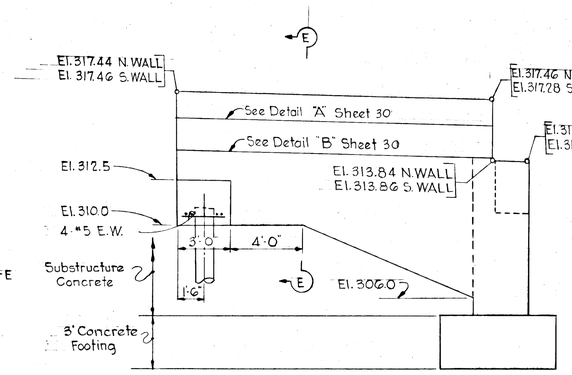


ELEVATION - ABUTMENT 'B'
Scale: 3/16" = 1'-0"

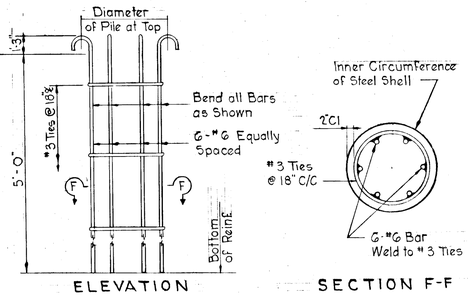


FOOTING PLAN - ABUTMENT 'B'
Scale: 3/16" = 1'-0"

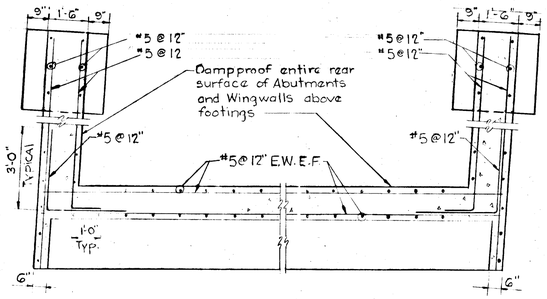
Note:
1. For Section A-A and Section E-E See Sheet 28 of



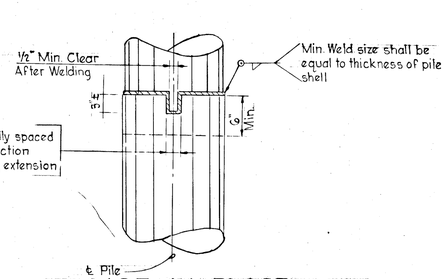
SECTION B-B (Shown)
SECTION C-C (Similar)
Scale 1/4" = 1'-0"



CAST-IN-PLACE PILE REINFORCING DETAIL
No Scale

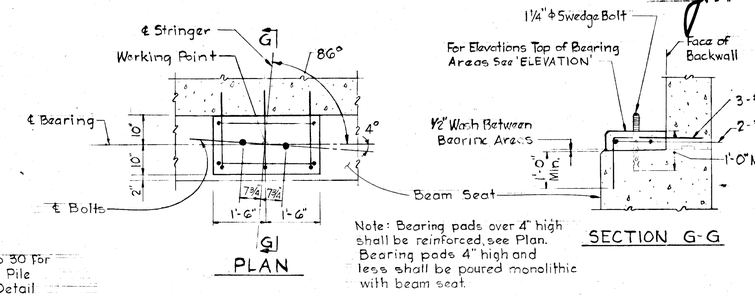


SECTION D-D
Scale: 3/8" = 1'-0"



CAST-IN-PLACE PILE FIELD SPLICE DETAIL
No Scale

Note:
See Sheet No. 30 for Steel Bearing Pile Field Splice Detail



Note: Bearing pads over 4" high shall be reinforced, see Plan. Bearing pads 4" high and less shall be poured monolithic with beam seat.

DETAILS OF BEARING AREA
Scale: 1/2" = 1'-0"

RECEIVED
DEPT. OF PUBLIC WORKS
BUREAU OF HIGHWAYS
DESIGN DIVISION
MAY 26 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
BRIDGE-ABUTMENT 'B'

Scale : As Shown Date

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72

F-72-85C

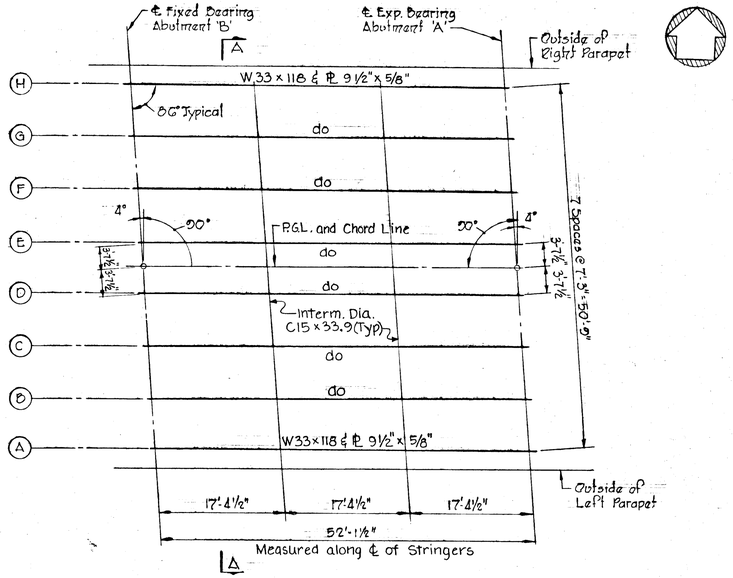
DEPARTMENT OF PUBLIC WORKS

K. H. Mcleand 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

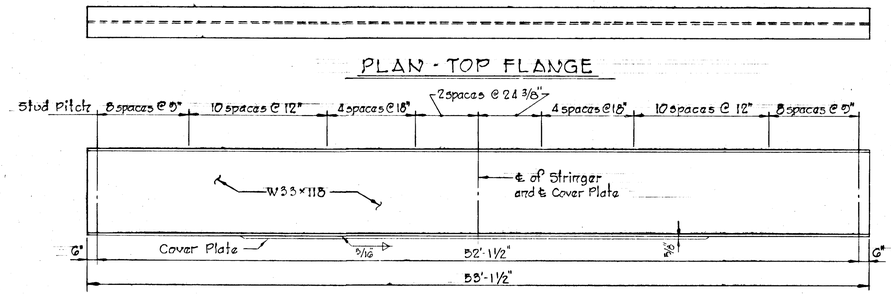
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE



1A

FRAMING PLAN

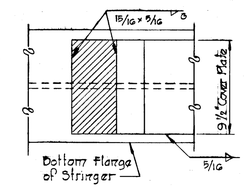
Scale: 1" = 10'



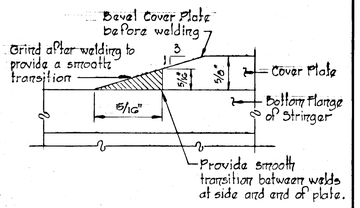
TYPICAL STRINGER DETAILS

Not to Scale

Note:
All shear connectors shall be field erected.



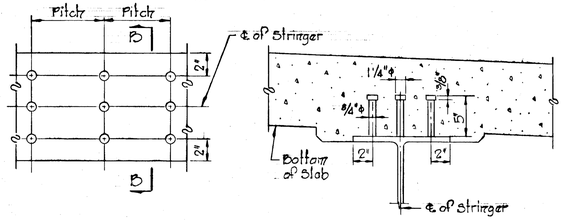
PLAN



SECTION

COVER PLATE END WELD DETAILS

Not to Scale

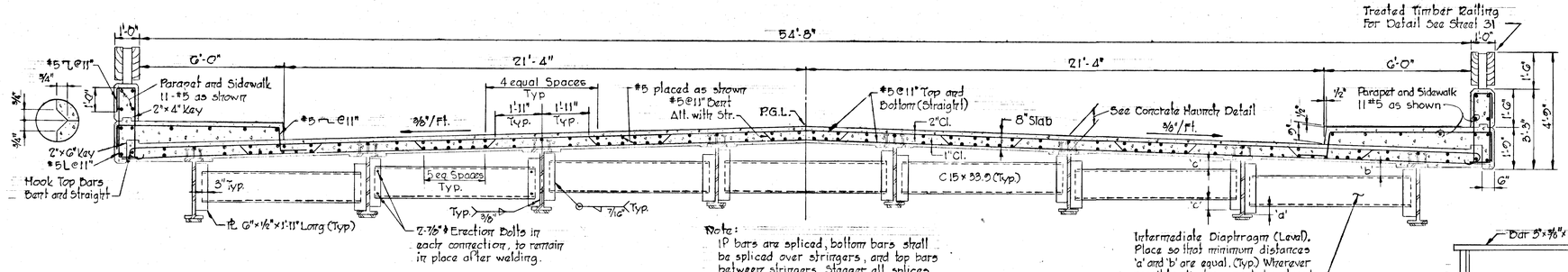


PLAN

SECTION B-B

SHEAR CONNECTOR DETAILS

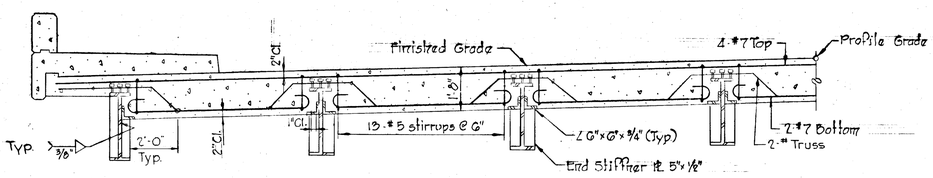
Not to Scale



Note:
1P bars are spliced, bottom bars shall be spliced over stringers, and top bars between stringers. Stagger all splices.

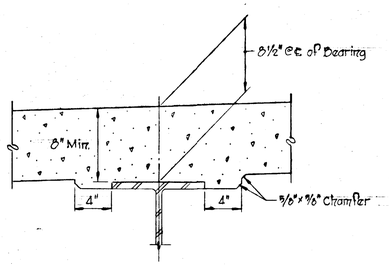
SECTION A-A

Scale: ⅜" = 1'-0"



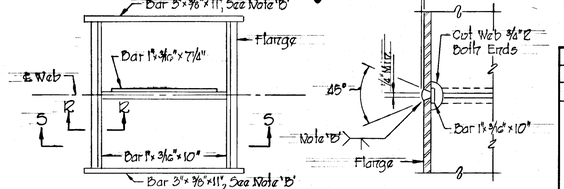
TYPICAL SECTION AT END DIAPHRAGM

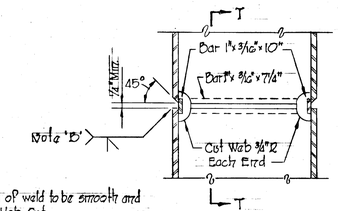
Not to Scale

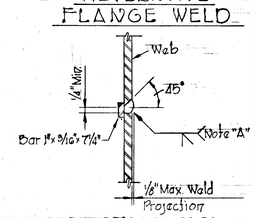


CONCRETE HAUNCH DETAIL

Not to Scale



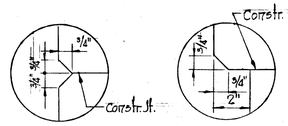




Note 'A' - End of weld to be smooth and flush with Web Cut.
Note 'B' - Bar 3" x ⅜" x 11" to be Tack Welded to Flange at splice to back up end of Flange weld. Remove ⅜" bar after weld is completed. End of weld must be smooth and flush with edge of flange.

PILE SPLICE DETAILS (HP10x42)

Not to Scale



Scale: 3" = 1'-0"

Rev. Date	Rev No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA

VILLAGE OF OWEN BROWN

SECTION 1, AREA 1

PROJECT TITLE

BRIDGE SUPERSTRUCTURE

SCALE: As Shown DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

MAY 2 0 1972

5/25/72

W.O. 6536-28

#61

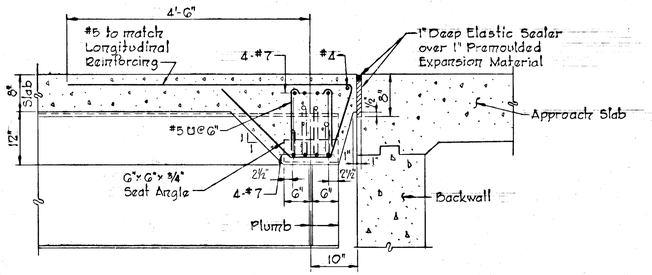
SHEET 30 OF 53

F-72-85C

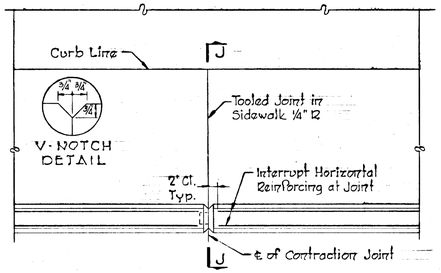
DEPARTMENT OF PUBLIC WORKS
D. N. Weiland 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

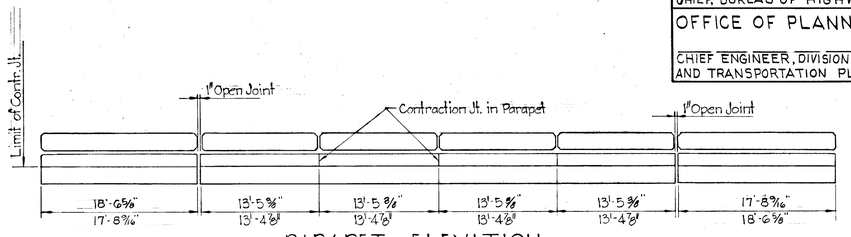
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE



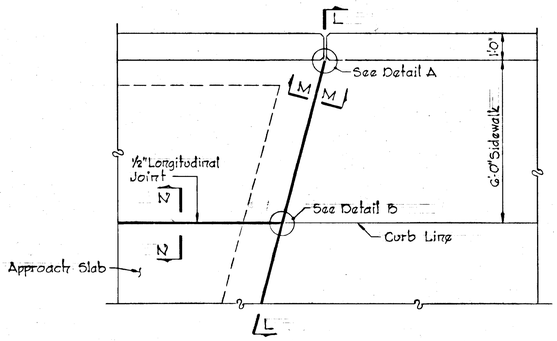
SECTION THRU END DIAPHRAGM
Scale : 3/4" = 1'-0"



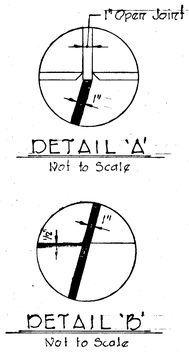
PLAN AT CONTRACTION JOINT
Not to Scale



PARAPET ELEVATION

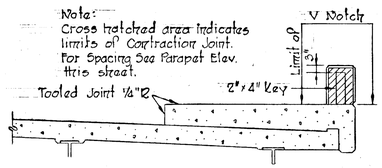


PART PLAN AT ABUTMENTS
Scale : 3/8" = 1'-0"

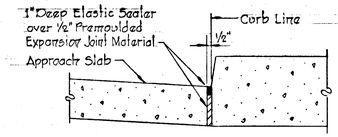


DETAIL 'A'
Not to Scale

DETAIL 'B'
Not to Scale



SECTION J-J
Not to Scale



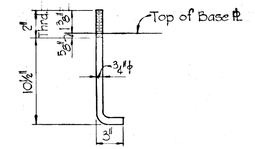
SECTION N-N
Not to Scale

SECTION AT POST

SECTION S-S

SECTION T-T

DETAIL 'C'

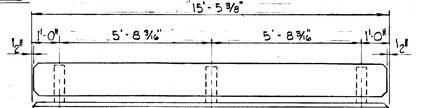


DETAIL 'D'

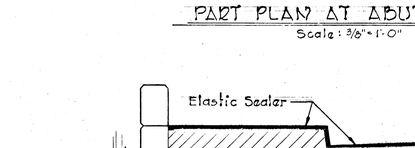
RAIL AND POST DETAILS
Not to Scale

NOTES
1. Lumber for Bridge Rail shall be Select Structural Douglas Fir "1900f", salt treated in accordance with the Standard Specifications to retain a minimum of 0.55 p.c.f. of Wolman Salt (Tanalith).
2. Railing Posts and Base Plates shall be A.S.T.M. A-36.
3. Posts, Base Plates, Anchor Bolts, Nuts and Washers shall be galvanized.

TYPICAL PANEL AT ABUTMENT

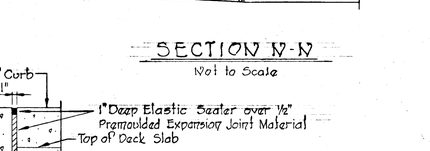


PANEL ON BRIDGE



PLAN

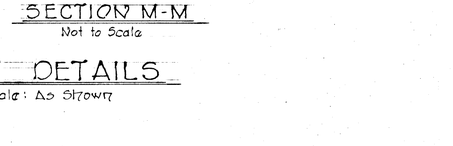
SECTION P-P



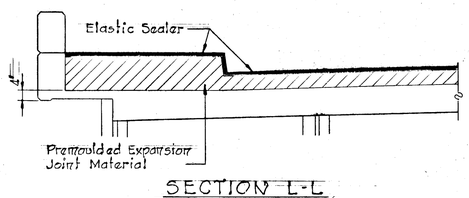
SECTION R-R

BEARING DETAILS
Scale: 1½" = 1'-0"

JOINT DETAILS
Scale : As Shown



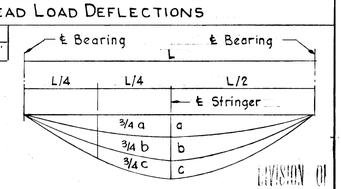
SECTION M-M
Not to Scale



SECTION L-L
Not to Scale

DEAD LOAD DEFLECTIONS

STRINGER	a	b	c
A / 1	1⅛"	9/16"	1/8"



a Deflection at ℄ due to weight of Structure Steel
b Deflection at ℄ due to weight of Reinforced Concrete Slab
c Deflection at ℄ due to weight of Parapet & Sidewalk

Note: Camber all Stringers 1"

DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
MAY 26 1972
APPROVED

JRC
5/25/72

Rev Date	Rev No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
BRIDGE SUPERSTRUCTURE DETAILS

Scale : As Shown Date

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

STATE OF MARYLAND

W.O. 6536-28
#161

SHEET 31 OF 53

F-72-85C

DEPARTMENT OF PUBLIC WORKS

D. N. Weiland 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

N497,000

E 845,000

N496,500

E 842,500

E 843,000

E 843,500

E 844,000

E 844,500

N495,500

See Sheet 33 of 53

See Sheet 34 of 53

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA

VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE

DRAINAGE AREA MAP

SCALE: 1" = 100' DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

MAY 26 1972

KENNETH A. McCORD
Registered Engineer
No. 1974

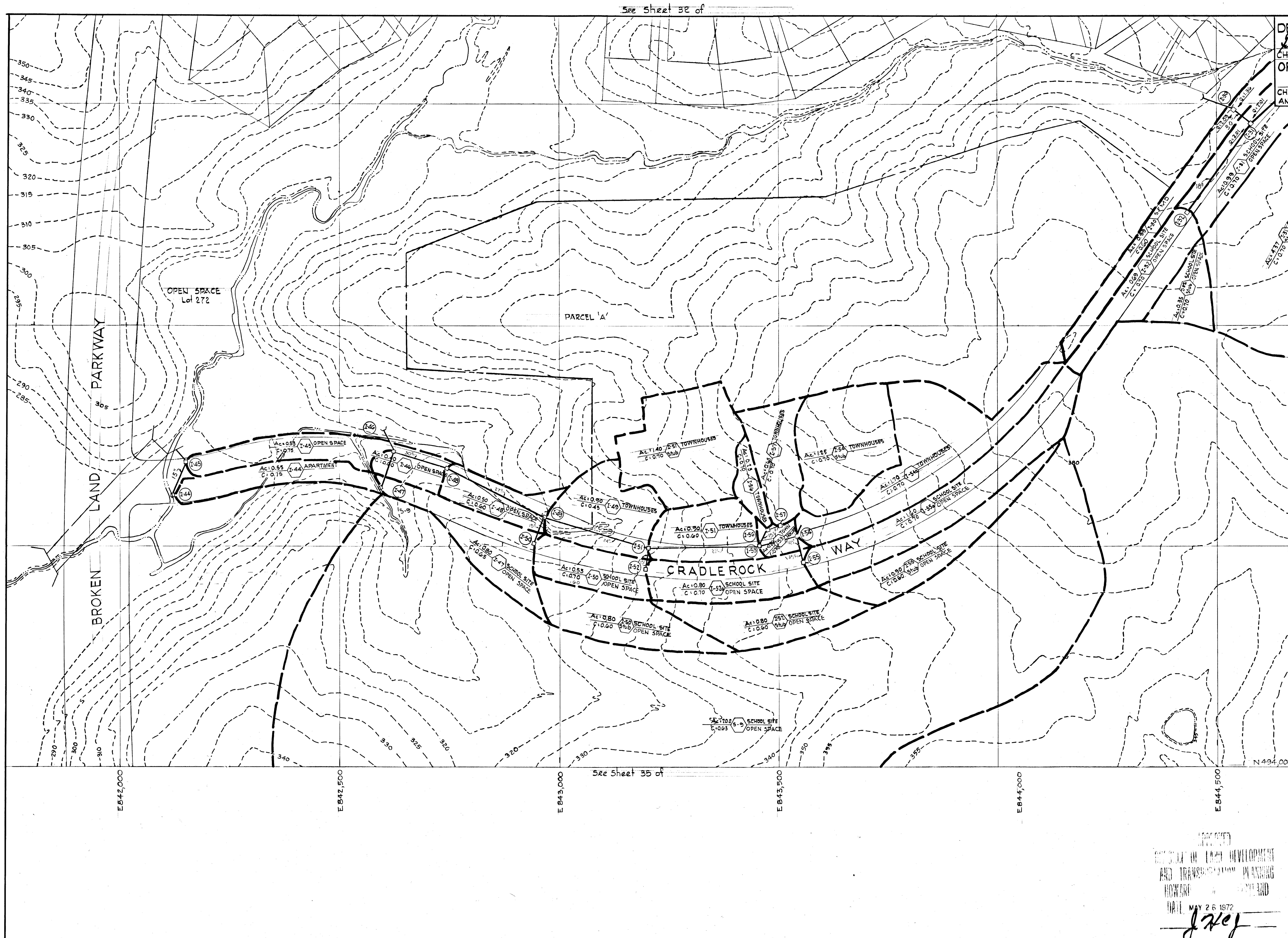
5/25/72

SHEET 32 OF 53

WO 6536-2B

#61

F-72-85C



DEPARTMENT OF PUBLIC WORKS

D. W. Weeland 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

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COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA

VILLAGE OF OWEN BROWN

SECTION 1, AREA 1

PROJECT TITLE

DRAINAGE AREA MAP

SCALE: 1" = 100' DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972

W.O. 6536-28
#61

5/25/72

SHEET 33 OF 53

F-72-85c

See Sheet 32 of 53

DEPARTMENT OF PUBLIC WORKS
D. K. McLeod 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

PARCEL 'D'
PARCEL 'C'
Lot 274 OPEN SPACE
CRADLEROCK WAY
WINDHARP
TAULER COURT
BROWSING DEER
WAY
OAKEN DOOR
DEEP CALM
SUNSET LIGHT
COMMERCIAL
APTS
SFMD
N494,000
N494,500
N495,000
N495,500
N496,000
N496,500
N497,000
E 845,000
E 845,500
E 846,000

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
DRAINAGE AREA MAP

SCALE: 1" = 100' DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
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MAY 26 1972

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KENNETH A. McCORD
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F-72-85

DEPARTMENT OF PUBLIC WORKS

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6TH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA

VILLAGE OF OWEN BROWN

See Sheet 33 of

See Sheet 36 of

N494,000 E 842,000 E 842,500 E 843,000 E 843,500 E 844,000 E 844,500 E 845,000

N493,500

N493,000

N492,500

PARCEL 'B'

PARCEL 'E'

PARCEL 'F' Apartments

OPEN SPACE Lot 273

BROKEN LAND PARKWAY

CRADLEROCK WAY

Ac.=1.80 C=0.70 I-17a APARTMENT

Ac.=1.40 C=0.70 I-16 APARTMENTS

Ac.=0.91 C=0.75 I-14 APARTMENTS

Ac.=0.65 C=0.75 I-15 APARTMENT

Ac.=1.12 C=0.70 I-14 stub APARTMENTS

Ac.=1.45 C=0.70 I-13 stub APARTMENTS

Ac.=0.53 C=0.70 I-16 stub APARTMENT

Ac.=1.30 C=0.70 I-19 stub COMMERCIAL

Ac.=0.71 C=0.70 I-29 COMMERCIAL

Ac.=0.91 C=0.065 I-27 OPEN SPACE

Ac.=1.15 C=0.75 I-28 COMMERCIAL

Ac.=0.30 C=0.90 I-28 stub COMMERCIAL

Ac.=1.00 C=0.70 I-19 stub COMMERCIAL

Ac.=0.55 C=0.75 I-20 COMMERCIAL

Ac.=0.74 C=0.70 I-18 APARTMENT

Q=3.00 Q=1.99 Q=2.10 Q=3.20

APPROVED
DEPARTMENT OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972

PROJECT TITLE

DRAINAGE AREA MAP

SCALE: 1" = 100' DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

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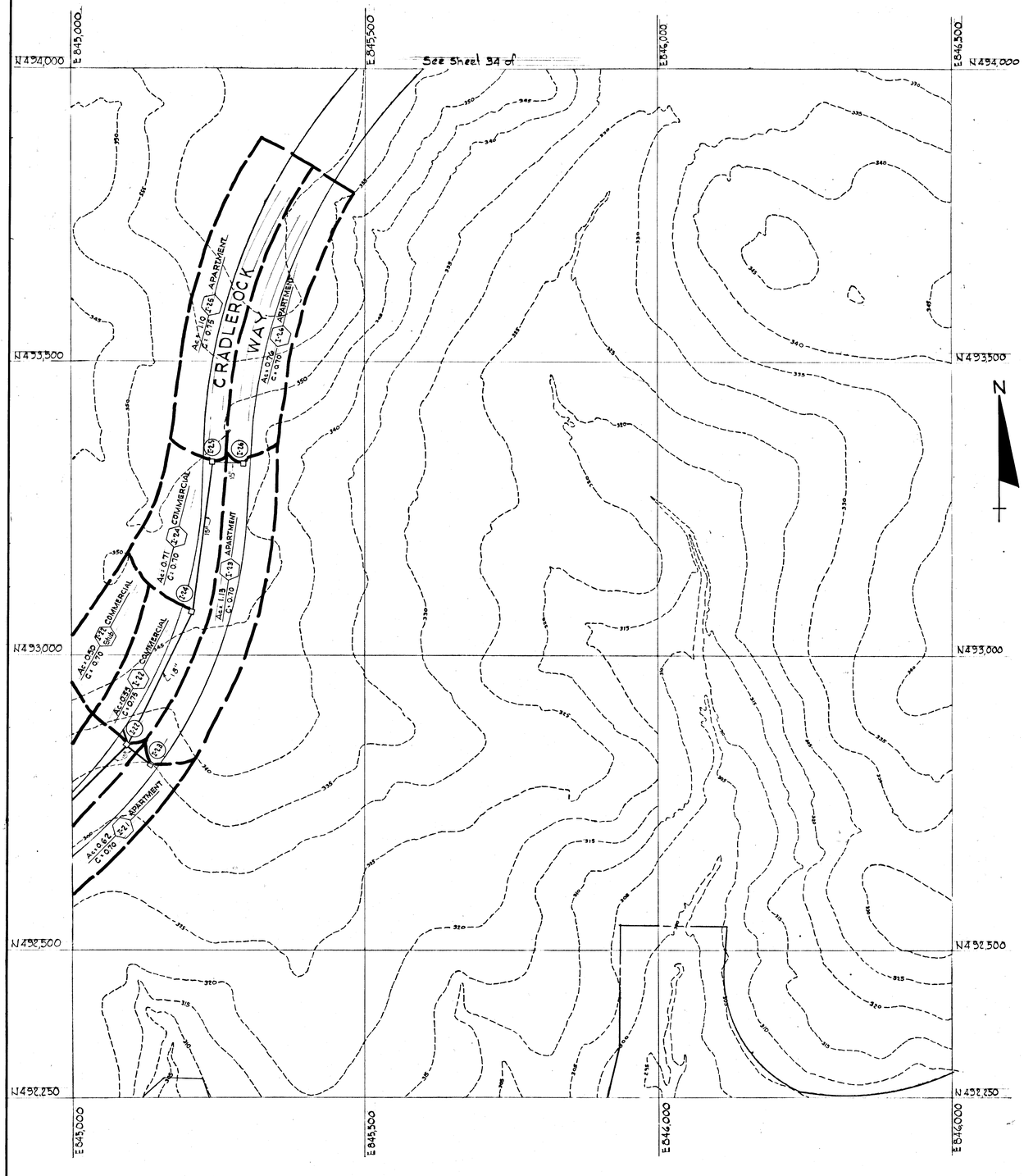
#61

5/25/72

SHEET 35 OF 53

F-72-85



Area	Acres	C	Zoning
I-1	0.87	0.70	S.F.M.D.
I-2	1.28	0.70	Apartment
I-3	0.41	0.70	S.F.M.D.
I-3 Stub	0.58	0.70	" " "
I-4	0.69	0.70	" " "
I-4 Stub	2.87	0.70	" " "
I-5	0.51	0.70	Apartment
I-5 Stub	0.68	0.70	Apartment
I-6	0.61	0.70	S.F.M.D.
I-6 Stub	1.67	0.70	S.F.M.D.
I-7	0.62	0.70	Apartment
I-7 Stub	1.08	0.70	Apartment
I-8	0.63	0.70	S.F.M.D.
I-8 Stub	1.95	0.70	S.F.M.D.
I-9	0.59	0.70	Apartment
I-9 Stub	0.64	0.70	Apartment
I-10	0.95	0.55	S.F.M.D.
I-11	0.84	0.70	Commercial
I-12	1.40	0.55	S.F.M.D.
I-13	0.65	0.75	Apartment
I-13 Stub	1.45	0.70	" "
I-14	0.82	0.75	" "
I-14 Stub	4.12	0.70	" "
I-15	1.40	0.70	" "
I-16	1.00	0.75	" "
I-16 Stub	0.53	0.70	" "
I-17	1.80	0.70	" "
I-18	0.74	0.70	" "
I-19	0.55	0.75	Commercial
I-19 Stub	1.00	0.70	" "
I-20	0.55	0.75	" "
I-20 Stub	0.80	0.70	" "
I-21	0.62	0.70	Apartment
I-22	0.55	0.75	Commercial
I-22 Stub	0.50	0.70	Commercial
I-23	1.13	0.70	Apartment
I-24	0.71	0.70	Commercial
I-25	1.10	0.75	Apartment
I-26	0.76	0.70	Apartment
I-27	0.91	0.65	Open Space
I-28	1.15	0.75	Commercial
I-29	0.71	0.70	" "
I-29 Stub	2.30	0.70	" "
I-30	0.99	0.60	S.F.M.D.
I-31	0.99	0.70	S.S.F.O.S.
I-31 Stub	4.37	0.70	" "
I-32	0.69	0.70	" "
I-32 Stub	0.35	0.70	" "
I-33	0.85	0.70	Commercial
I-33 Stub	1.04	0.70	Commercial
I-34	1.25	0.55	S.F.M.D.
I-35	1.47	0.50	" "
I-36	0.60	0.55	" "
I-37	1.01	0.55	" "
I-38	0.35	0.55	" "
I-39	1.56	0.35	" "
I-40	0.48	0.36	" "
I-41	0.92	0.50	" "
I-42	0.85	0.45	" "
I-43	1.58	0.45	" "
I-44	0.55	0.75	Apartment
I-45	0.53	0.75	Open Space
I-46	0.40	0.60	Open Space
I-47	0.80	0.65	S.S.F.O.S.
I-48	0.50	0.60	Open Space
I-49	0.90	0.45	Townhouse
I-50	0.53	0.70	S.S.F.O.S.
I-50 Stub	0.80	0.60	S.S.F.O.S.
I-51	0.90	0.60	Townhouse
I-51 Stub	1.40	0.70	Townhouse
I-52	0.80	0.70	S.S.F.O.S.
I-52 Stub	0.80	0.60	S.S.F.O.S.
I-53	0.20	0.70	Townhouse
I-54	1.70	0.70	" "
I-54 Stub	1.25	0.70	" "
I-55	1.60	0.70	S.S.F.O.S.
I-55 Stub	0.90	0.60	S.S.F.O.S.
I-56	0.23	0.70	Townhouse
I-57	0.65	0.70	Townhouse
I-58	0.71	0.35	S.F.M.D.
I-60	0.55	0.55	" "

Area	Acres	C	Zoning
I-61	0.99	0.60	S.F.M.D.
I-62	0.94	0.60	" "
I-63	0.92	0.50	" "
I-64	0.87	0.60	" "
I-65	0.37	0.60	" "
I-66	1.10	0.50	" "
I-67	0.90	0.50	" "
I-68	0.60	0.55	" "
I-69	0.87	0.55	" "
I-70	0.94	0.50	" "
I-71	1.40	0.50	" "
I-72	0.44	0.55	" "
I-73	1.50	0.55	" "
I-74	0.34	0.45	" "
I-75	2.25	0.45	" "
I-76	0.41	0.55	" "
I-77	0.48	0.55	" "
I-78	1.72	0.50	" "
I-79	0.69	0.60	" "
I-80	0.07	0.65	" "
I-81	1.82	0.45	" "
I-82	0.60	0.60	" "
I-83	0.39	0.60	" "
I-84	0.69	0.45	" "
I-85	2.02	0.45	" "
I-86	1.11	0.50	" "
I-87	0.72	0.50	" "
I-88	1.04	0.50	" "
I-89	0.32	0.35	" "
I-90	1.09	0.35	" "
I-91	1.61	0.35	" "
I-92	1.85	0.55	" "
I-93	1.15	0.55	" "
I-94	1.24	0.55	" "
I-95	1.04	0.60	" "
I-96	3.24	0.45	" "
I-97	2.02	0.50	" "
I-98	0.92	0.60	" "
I-99	1.08	0.60	" "
I-100	0.92	0.55	" "
I-101	0.92	0.55	" "
I-102	1.52	0.45	" "
I-103	12.10	0.45	" "
I-104	0.99	0.60	" "
I-105	1.50	0.50	" "
I-106	0.39	0.60	" "
I-107	0.64	0.55	" "
I-108	0.46	0.60	" "
I-109	1.47	0.45	" "
I-110	0.53	0.50	" "
I-111	0.60	0.50	" "
I-112	1.37	0.45	" "
S-2	21.80	CA=14.87	APT. f.S.S.
S-9	20.00	0.68	S.S.F.O.S.
S-18	11.56	CA=5.58	S.F.M.D.

DEPARTMENT OF PUBLIC WORKS
D. M. Mellard 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
DRAINAGE AREA MAP

SCALE: 1" = 100' DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A McCord
KENNETH A McCORD
Registered Engineer
No. 1974

APPROVED
DEPT. OF LAND DEVELOPMENT AND PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 30 1972

W.O. 6536-2B
#61

5/25/72

SHEET 36 OF 53

F-72-85C

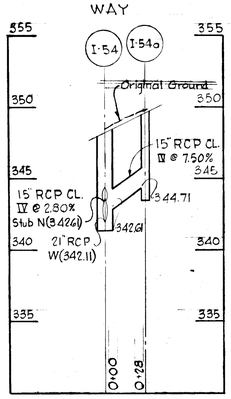
DEPARTMENT OF PUBLIC WORKS

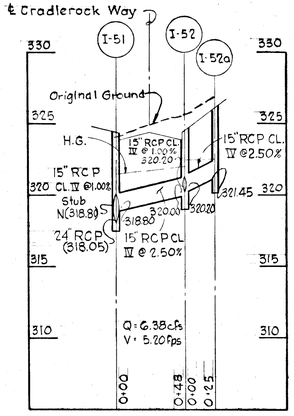
D. M. Mikkeland 5/30/72

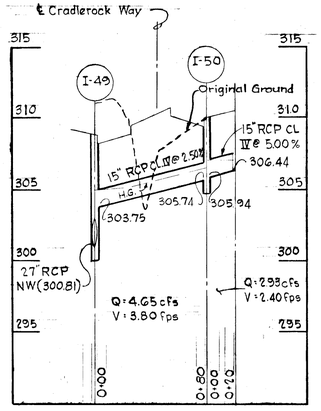
CHIEF, BUREAU OF HIGHWAYS DATE

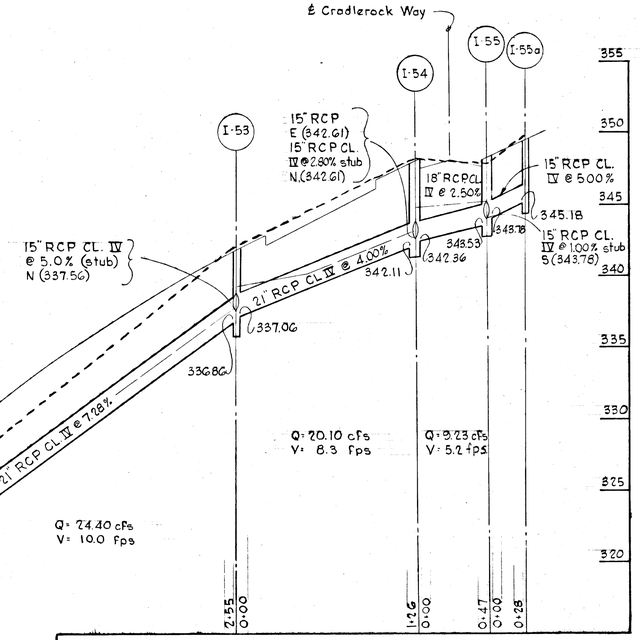
OFFICE OF PLANNING AND ZONING

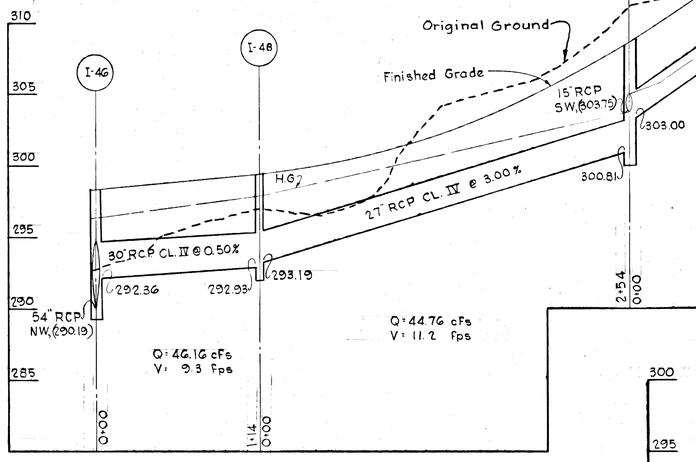
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING

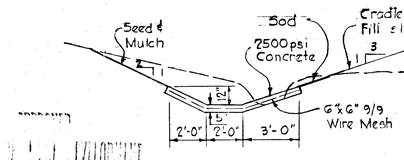






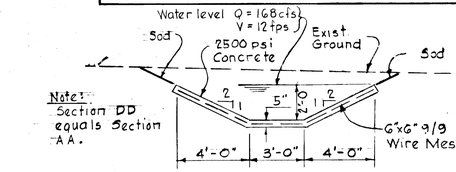






SECTION C-C

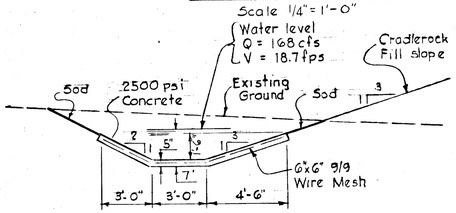
Scale 1/4" = 1'-0"



Note: Section DD equals Section AA.

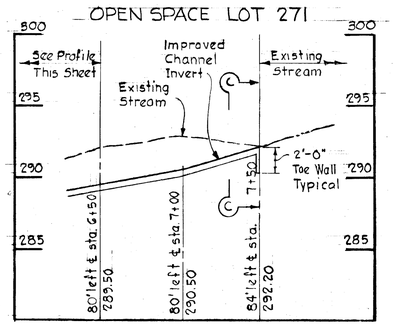
SECTION A-A

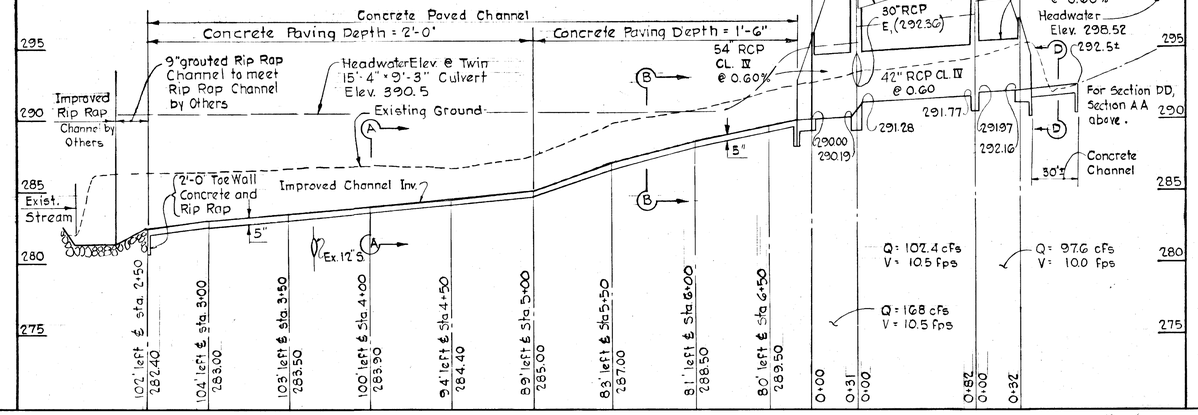
Scale 1/4" = 1'-0"



SECTION B-B

Scale 1/4" = 1'-0"





Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORP

PROJECT AREA

VILLAGE OF OWEN BROWN

SECTION 1, AREA 1

PROJECT TITLE

STORM DRAIN PROFILES

CRADLEROCK WAY

Scale: Hor. 1"=50'; Ver. 1"=5' Date

WHITMAN, REQUARDT & ASSOCIATES

ENGINEERS

BALTIMORE, MARYLAND 21202

Kenneth A. McCord

KENNETH A. McCORD

Registered Engineer

No. 1974

W.O. 6536-2B

#61

5/25/72

SHEET 37 OF 53

F-72-85C

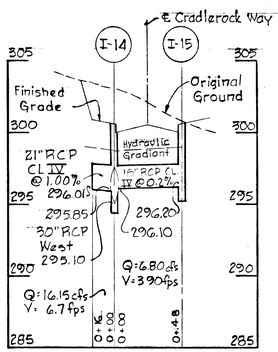
DEPARTMENT OF PUBLIC WORKS

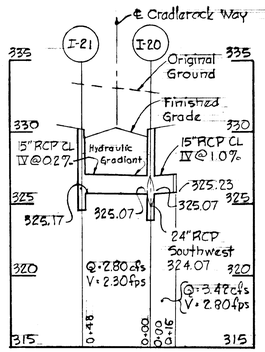
D. W. Melland 5/30/72

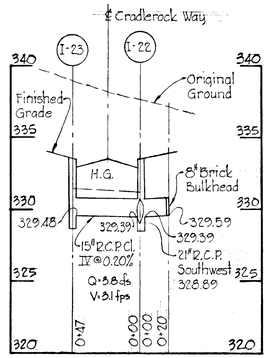
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

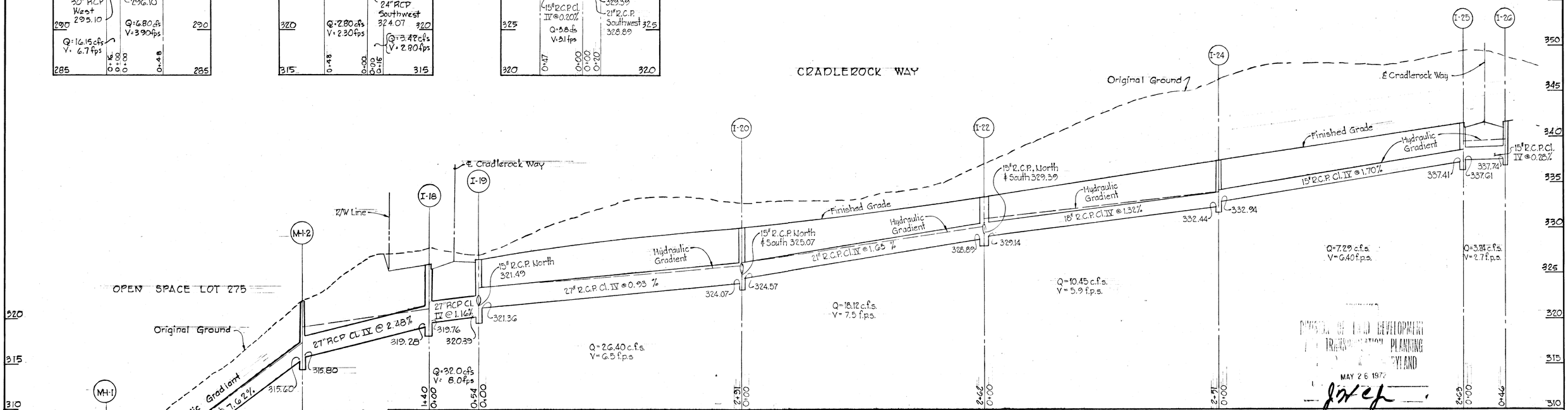
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

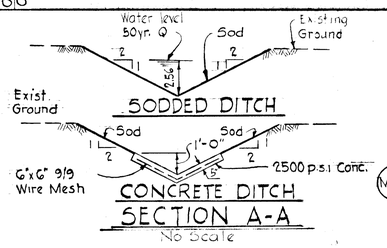






CRADLEROCK WAY





Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA

VILLAGE OF OWEN BROWN

SECTION 1, AREA 1

PROJECT TITLE

STORM DRAIN PROFILES
CRADLEROCK WAY

SCALE: Hor. 1"=50'; Ver. 1"=5' DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

MAY 26 1972

W.O. 0536-20
#61

5/25/72

SHEET 38 OF 53

F-72-85C

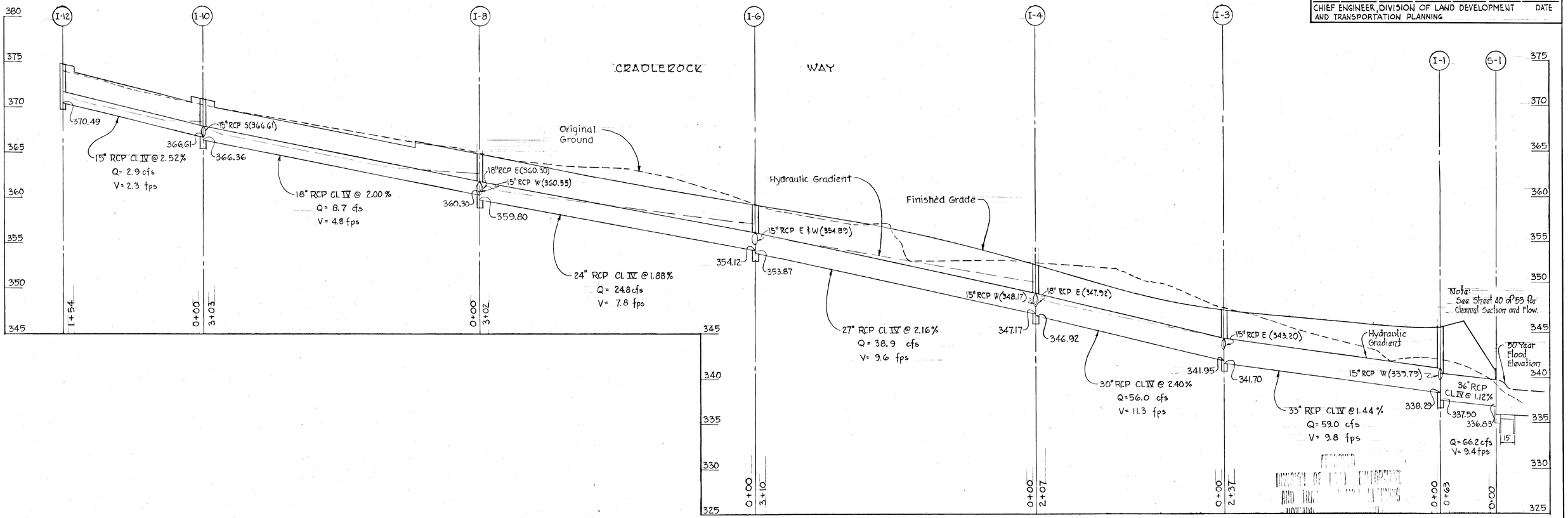
DEPARTMENT OF PUBLIC WORKS

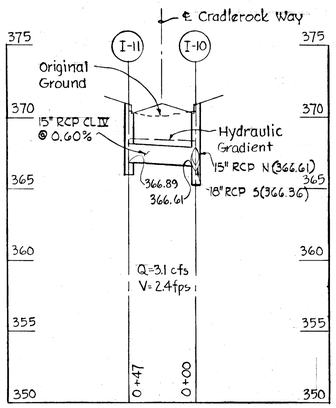
E. N. McLeod 5/30/72

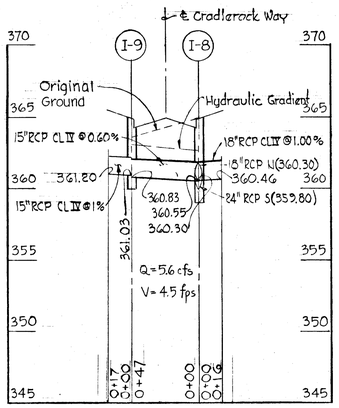
CHIEF, BUREAU OF HIGHWAYS DATE

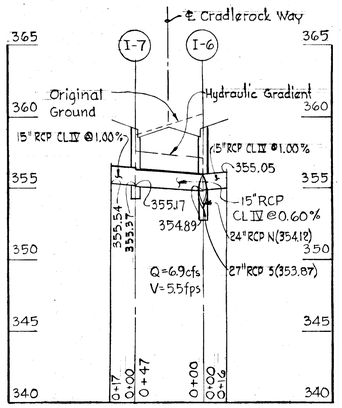
OFFICE OF PLANNING AND ZONING

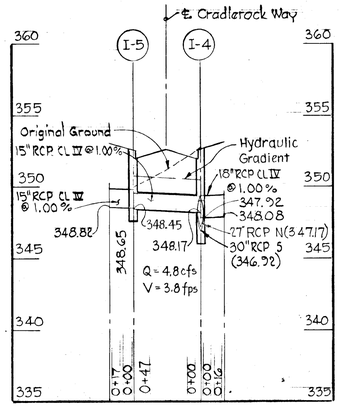
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

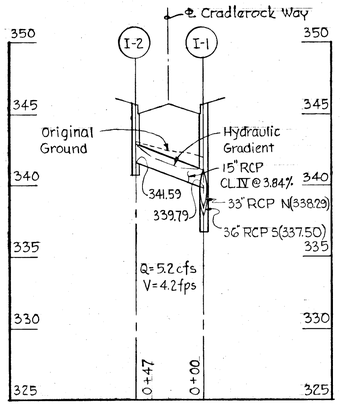












Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA

VILLAGE OF OWEN BROWN

SECTION 1, AREA 1

PROJECT TITLE

STORM DRAIN PROFILES

CRADLEROCK WAY.

SCALE: Hor. 1"=50', Ver. 1"=5' DATE

WHITMAN, REQUARDT & ASSOCIATES

ENGINEERS

BALTIMORE, MARYLAND 21202

Kenneth A. McCord

KENNETH A. McCORD

Registered Engineer

No. 1974

W.O. 6536-2D

#61

5/25/72

SHEET 39 OF 53

F-72-85C

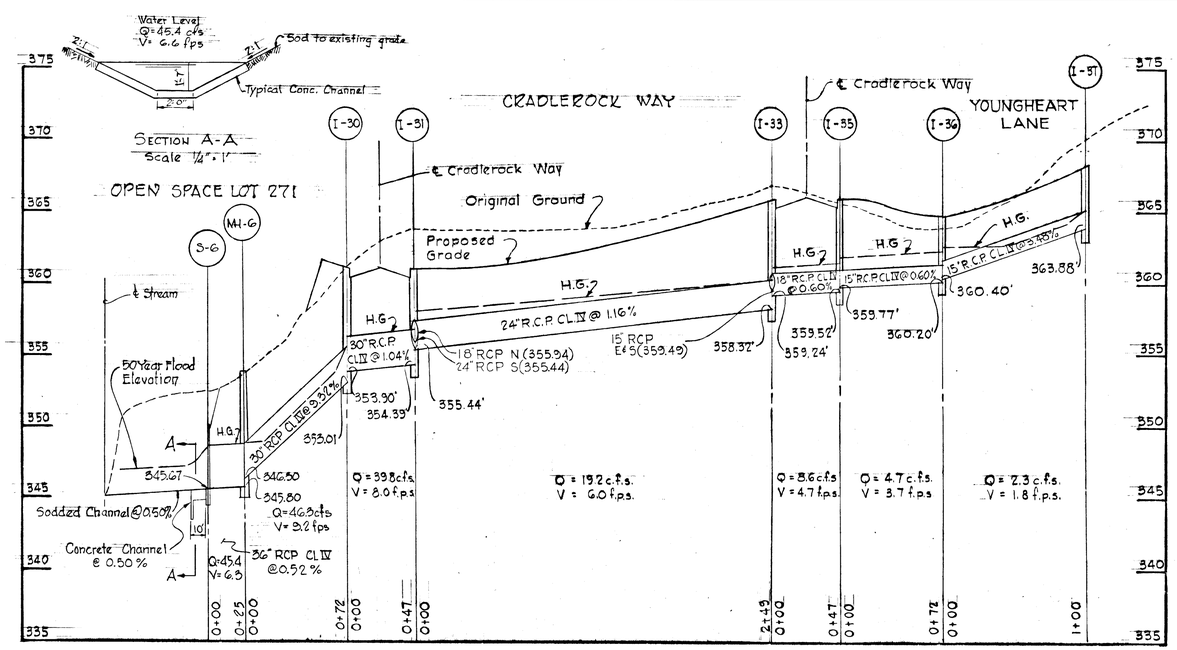
DEPARTMENT OF PUBLIC WORKS

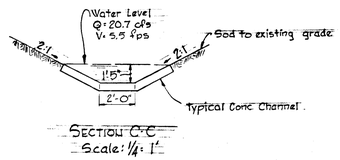
D. M. Mekland 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

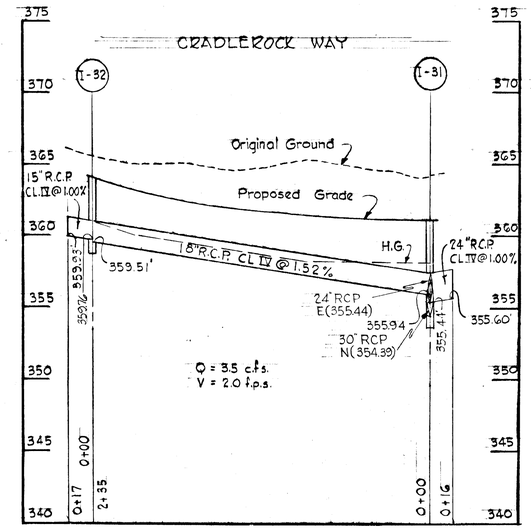
OFFICE OF PLANNING AND ZONING

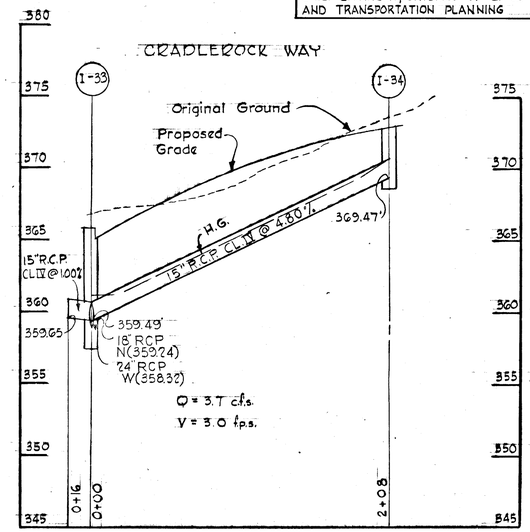
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

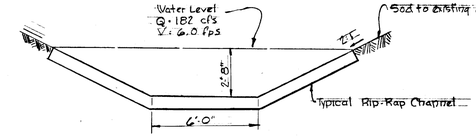




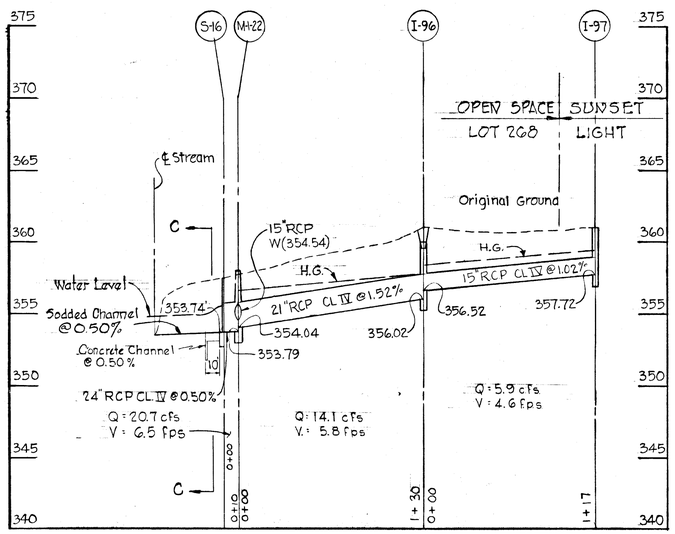
SECTION C-C
Scale: 1/4" = 1'

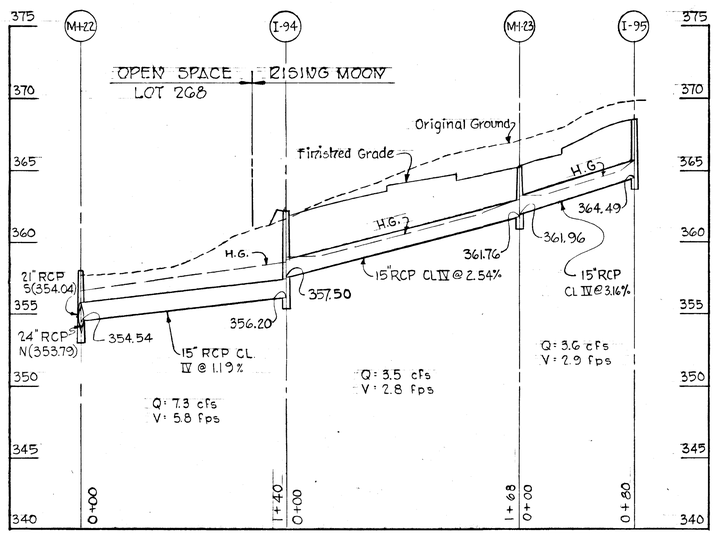


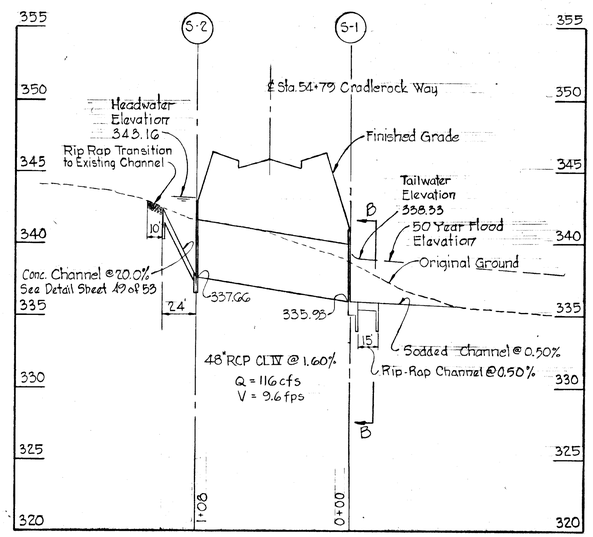




SECTION B-B
Scale: 1/4" = 1'







APPROVED
DIVISION OF LAND DEVELOPMENT AND PLANNING
HOWARD COUNTY, MARYLAND
MAY 26 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
STORM DRAIN PROFILES
CRADLEROCK WAY, YOUNGHEART LANE, SUNSET LIGHT AND RISING MOON

SCALE : Hor. 1"=50', Ver. 1"=5' DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

5/25/72

SHEET 40 OF 53

W.O. 653G-2B
#61

F-72-85C

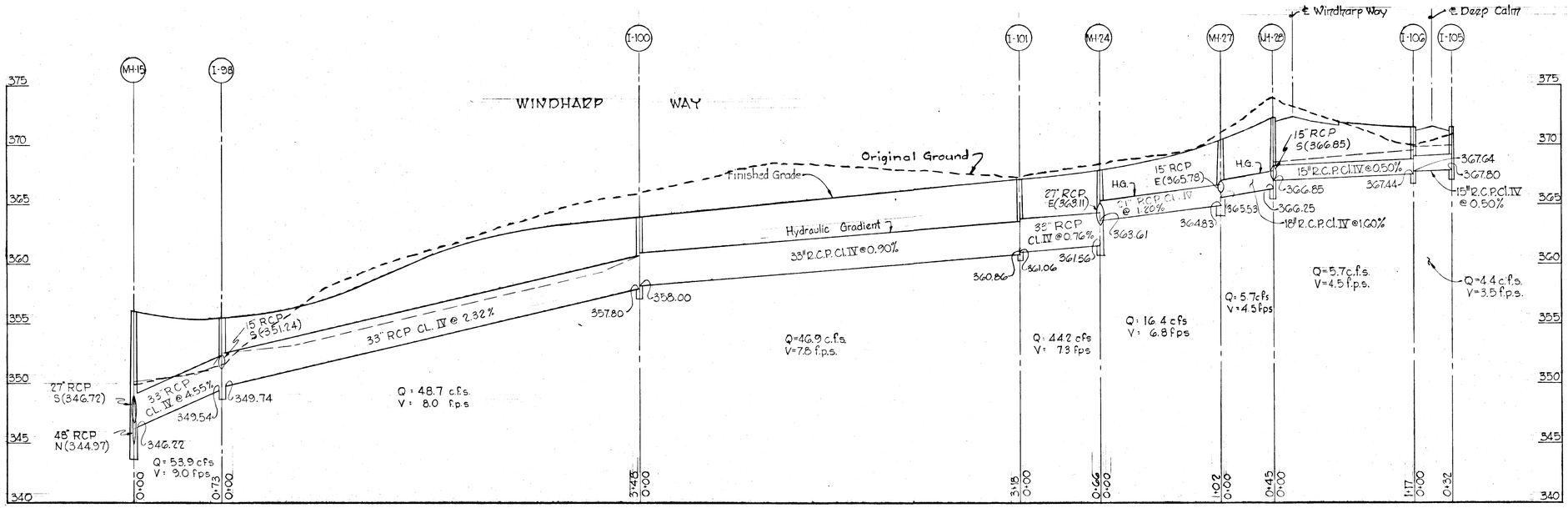
DEPARTMENT OF PUBLIC WORKS

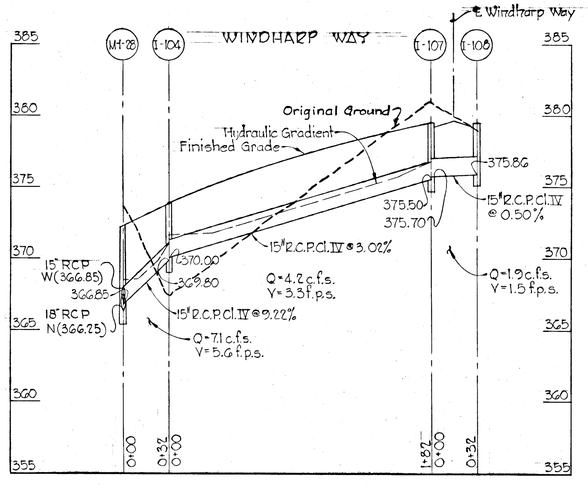
D. M. Weiland 5/30/72

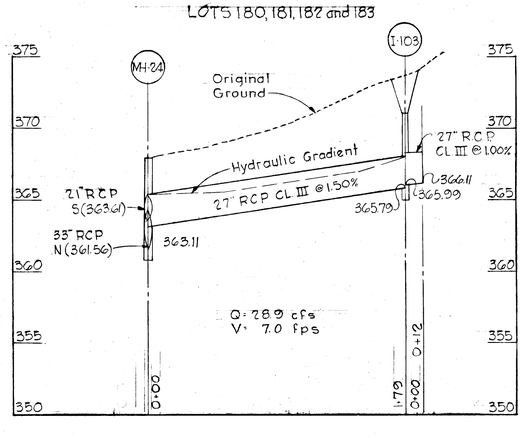
CHIEF, BUREAU OF HIGHWAYS DATE

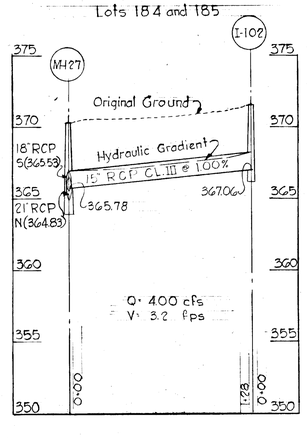
OFFICE OF PLANNING AND ZONING

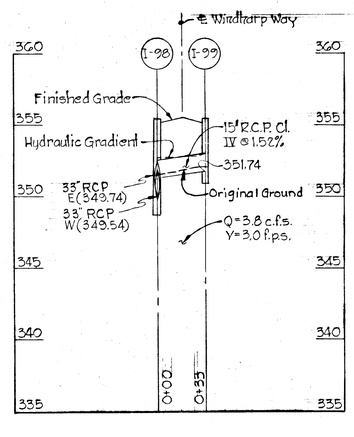
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE











RECEIVED
DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT
PLANNING
MAY 26 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA

VILLAGE OF OWEN BROWN

SECTION 1, AREA 1

PROJECT TITLE

STORM DRAIN PROFILES
WINDHARP WAY

SCALE : Hor. 1"=50'; Ver. 1"=5' DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. G53G-2D

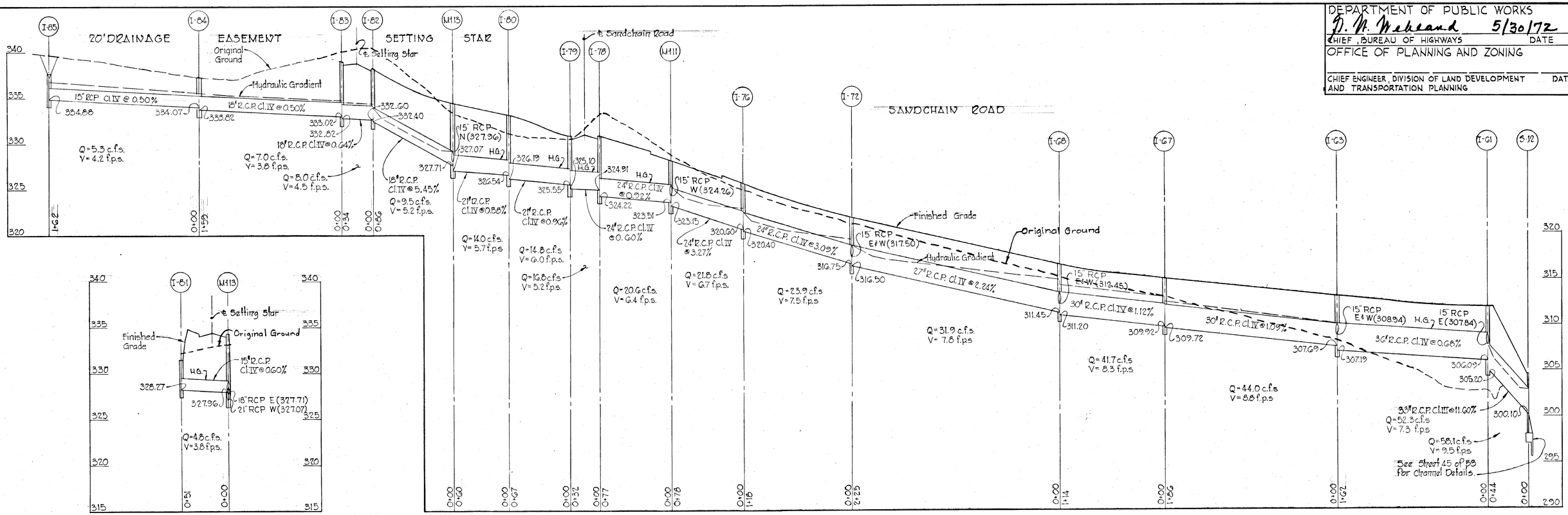
5/25/72

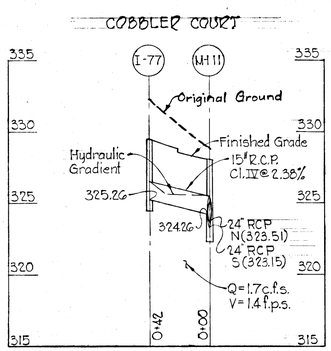
SHEET 41 OF 53

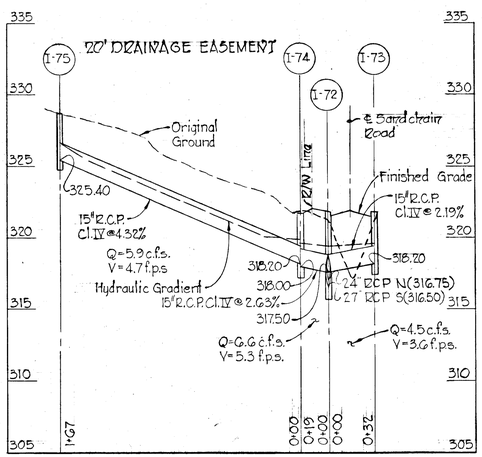
#61

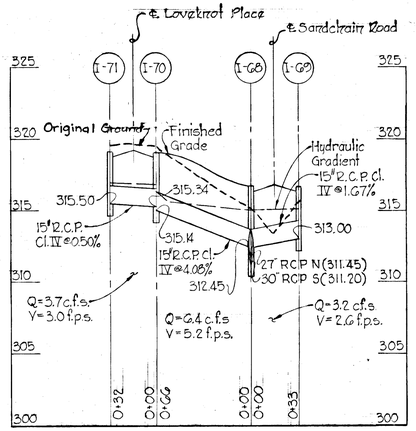
F-72-85C

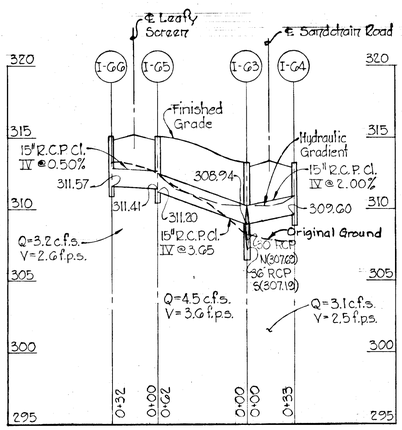
DEPARTMENT OF PUBLIC WORKS
D. H. Mehrand 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

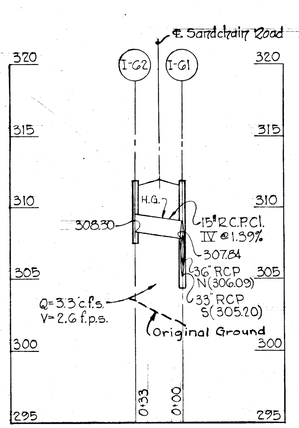












APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION
HOWARD COUNTY
DATE MAY 26 1972
JHCP

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
STORM DRAIN PROFILES
SANDCHAIN ROAD AND SETTING STAR

SCALE: Hor. 1"=50'; Ver. 1"=5' DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

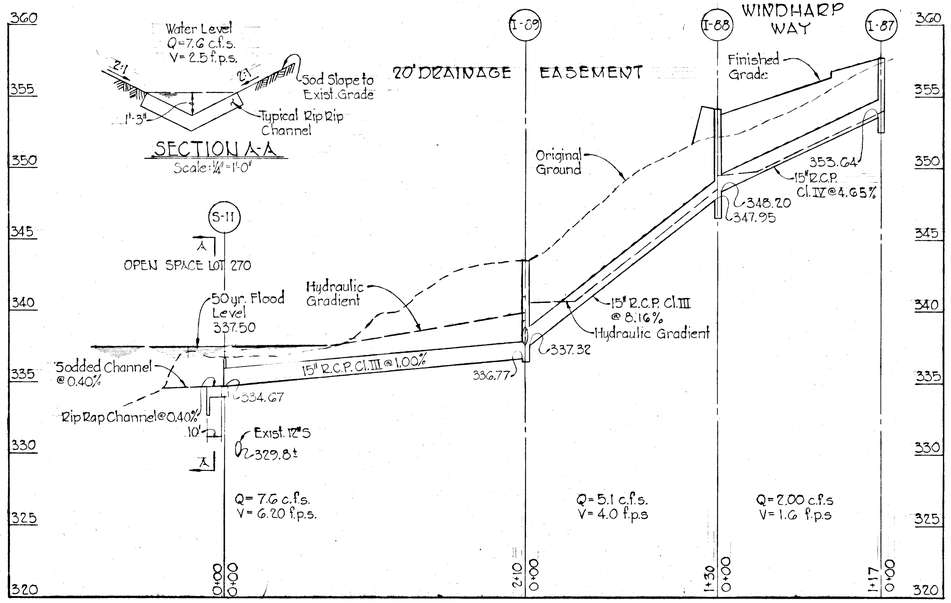
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

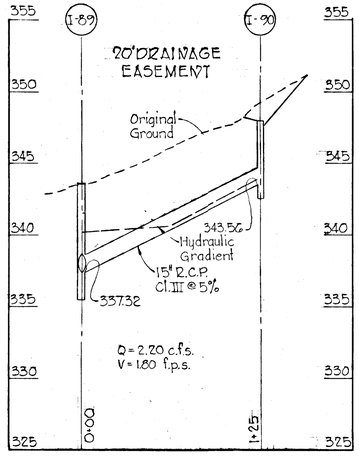
5/25/72

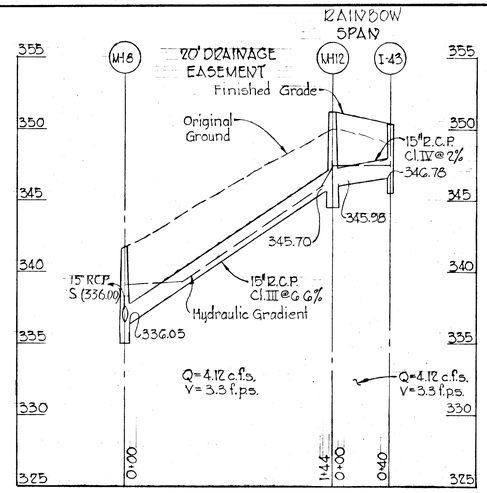
SHEET 42 OF 58

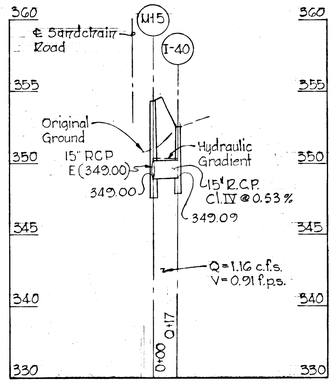
W.O. GB3G-2B
#61

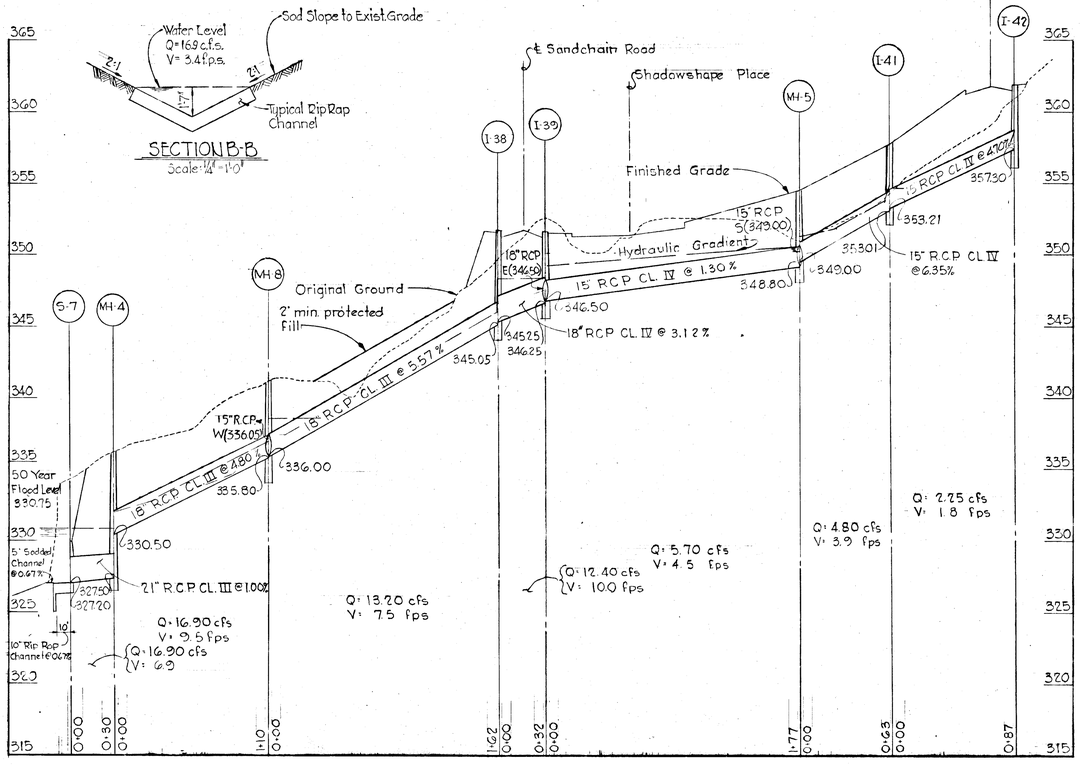
F-72-85C

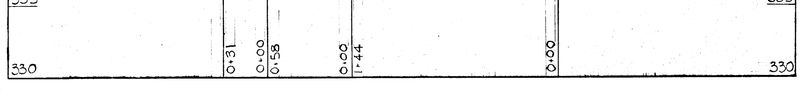












DEPARTMENT OF PUBLIC WORKS
D. H. Mehrand 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
DIVISION OF LAND DEVELOPMENT & PLANNING
DATE MAY 26 1972
J.W.C.J.

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

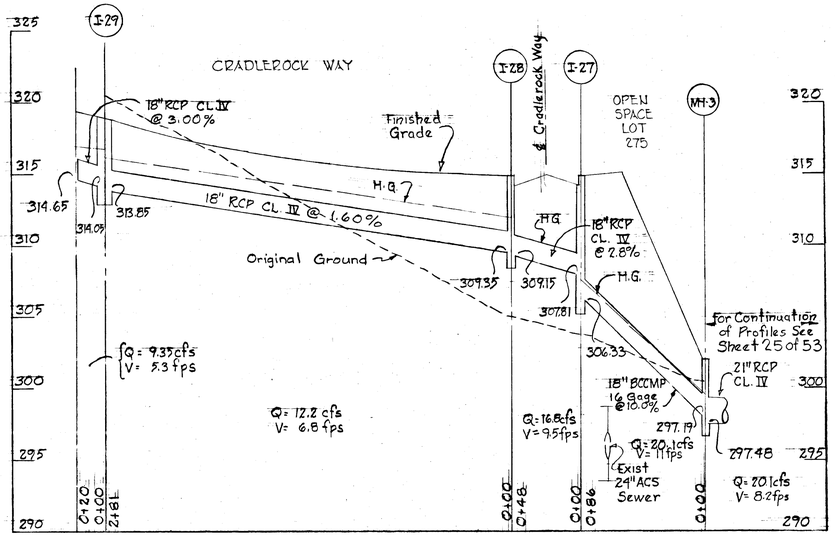
PROJECT TITLE
STORM DRAIN PROFILES
SANDCHAIN ROAD, WINDHARP WAY AND RAINBOW SPAN

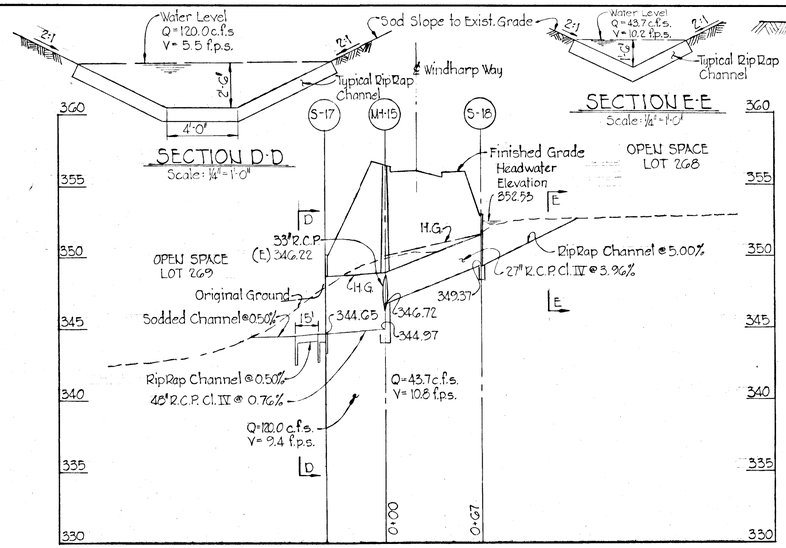
SCALE: Hor. 1"=50'; Ver. 1"=5' DATE:

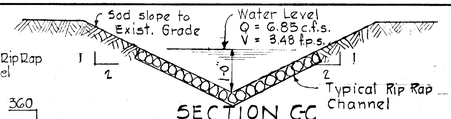
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

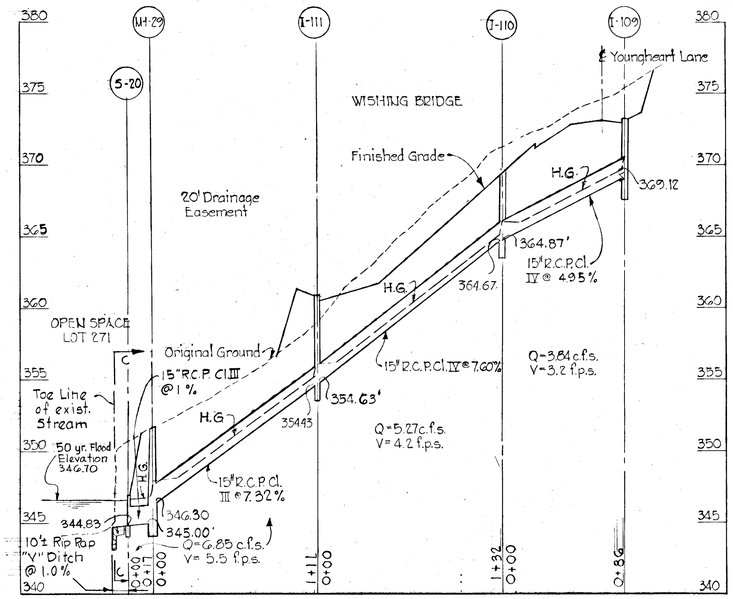
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

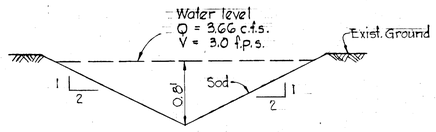
WO 6536-2B
#61
5/25/72
SHEET 43 OF 53
F-72-85C

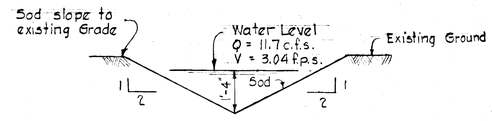


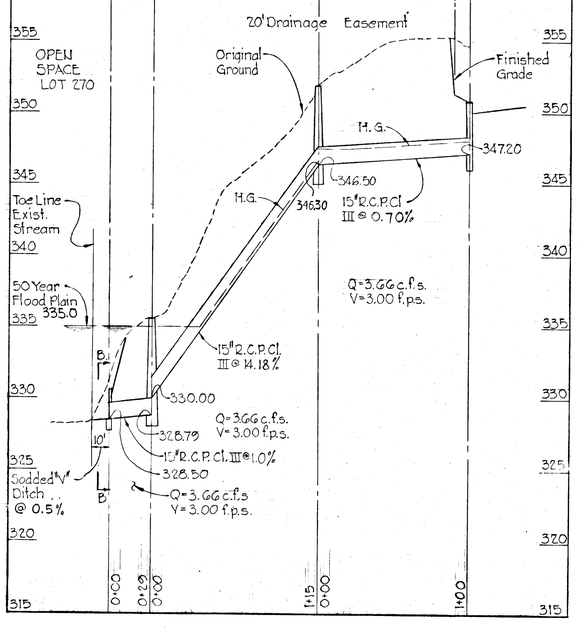


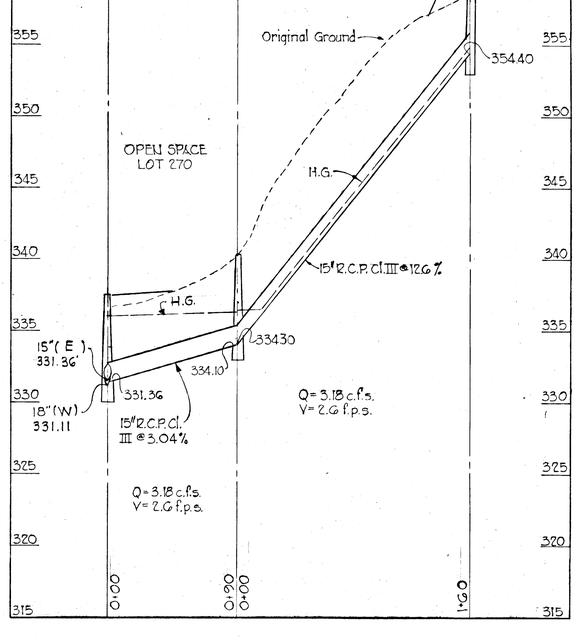


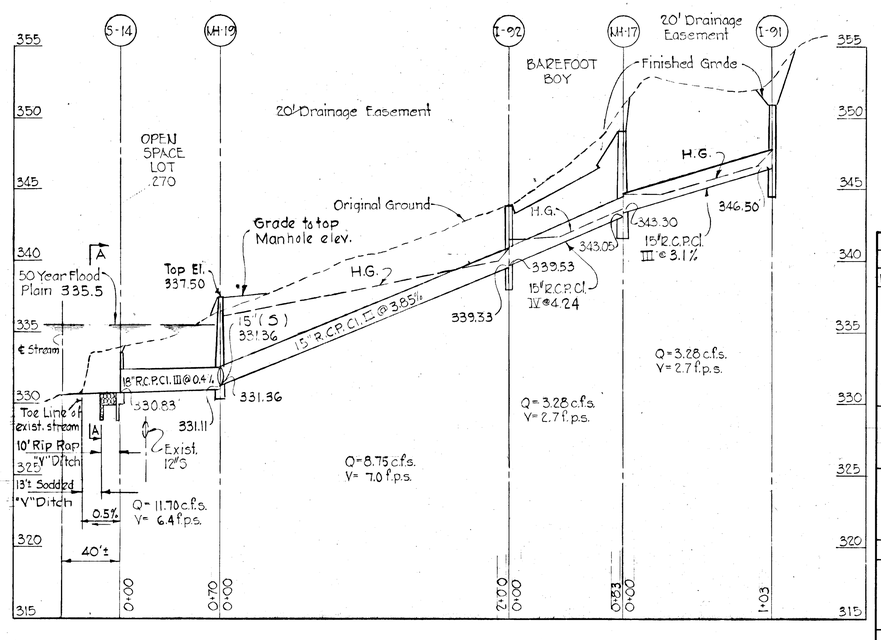












DEPARTMENT OF PUBLIC WORKS
D. N. Kelland 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
DIVISION OF LAND DEVELOPMENT
AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
Date MAY 26 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
STORM DRAIN PROFILES
CRADLEROCK WAY, WINDHARP WAY, WISHING BRIDGE, SETTING STAR, BAREFOOT BOY

Scale: Horiz.: 1"=50', Vert.: 1"=5' Date

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

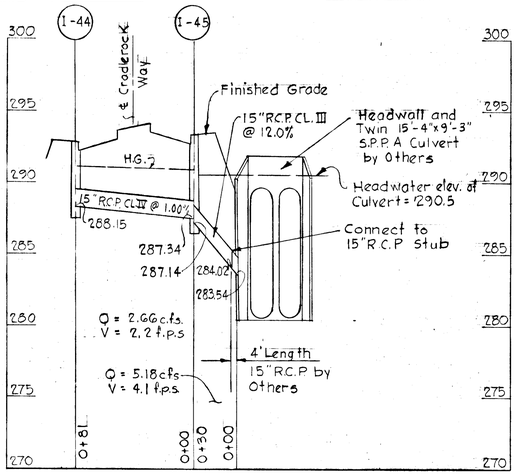
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

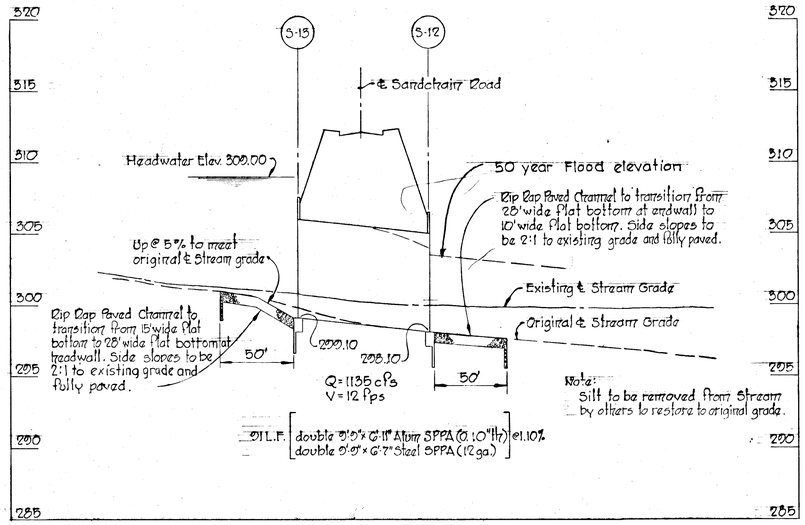
WO G536-2B
#61

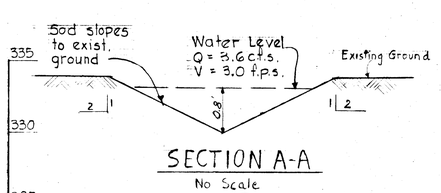
5/25/72

SHEET 44 OF 53

F-72-85C

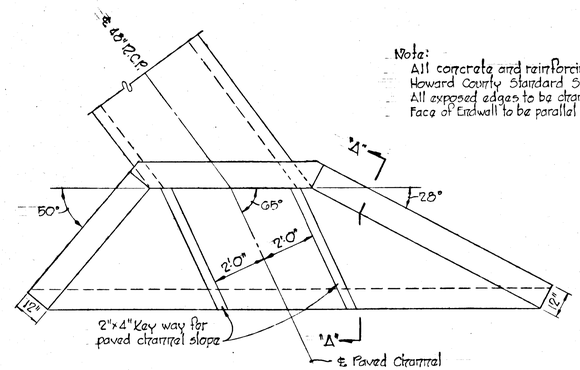






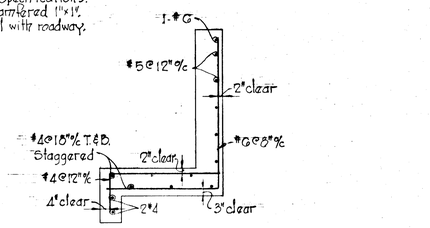
SECTION A-A

No Scale

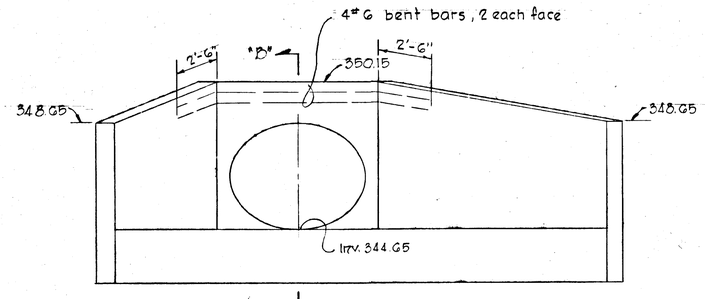


PLAN

Note:
All concrete and reinforcing shall meet Howard County Standard Specifications.
All exposed edges to be chamfered 1"x1".
Face of Endwall to be parallel with roadway.

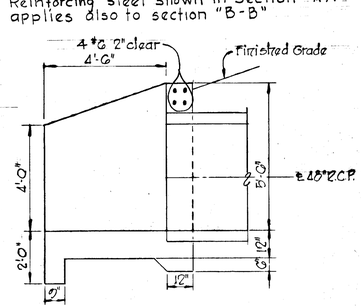


SECTION "A-A"



FRONT ELEVATION

Note:
Reinforcing steel shown in Section A-A applies also to section "B-B"



SECTION "B-B"

DETAIL - ENDWALL S-17

Scale: 3/8" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
D. N. Mcleod 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

APPROVED
DEPARTMENT OF LAND DEVELOPMENT
AND PUBLIC WORKS
HOWARD COUNTY, MARYLAND
MAY 26 1972
JRCJ

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION , AREA

PROJECT TITLE
STORM DRAIN PROFILES AND DETAILS

SCALE: Horiz: 1" = 50', Vert: 1" = 5' DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

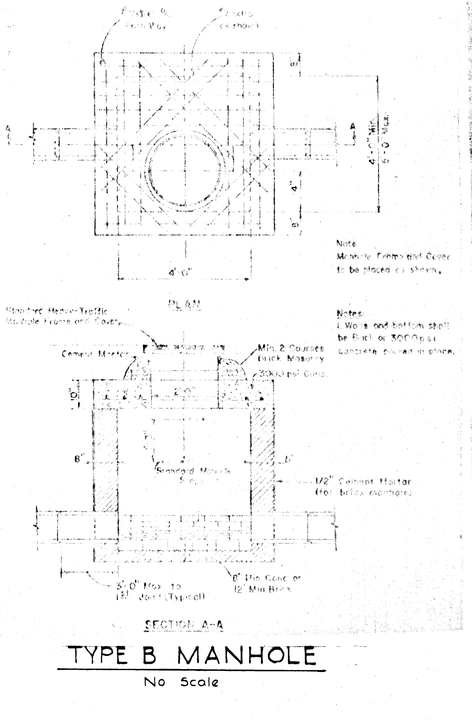
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

WO 6536-2B
#101

5/25/72

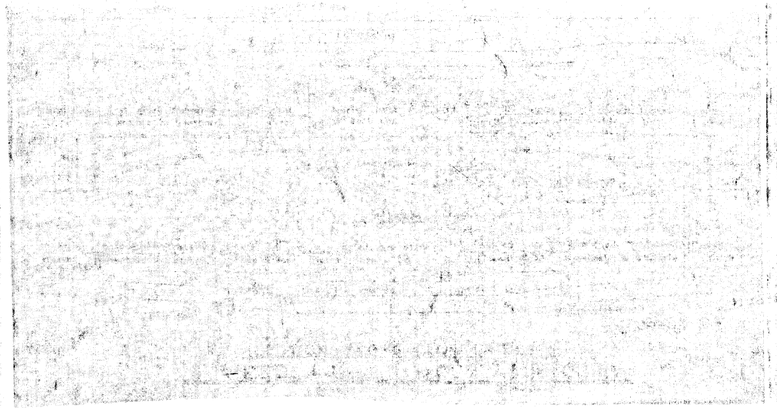
Sheet 45 of 53

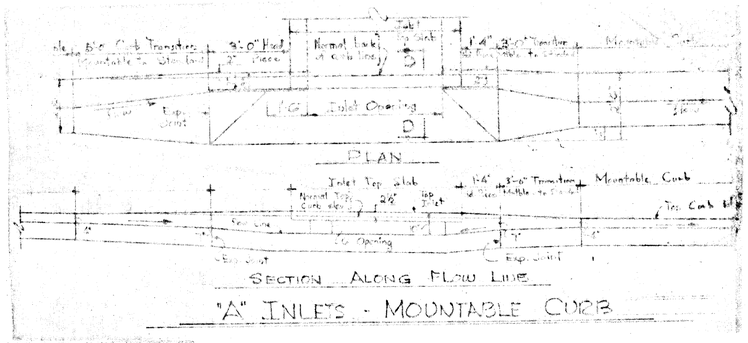
F-72-85C



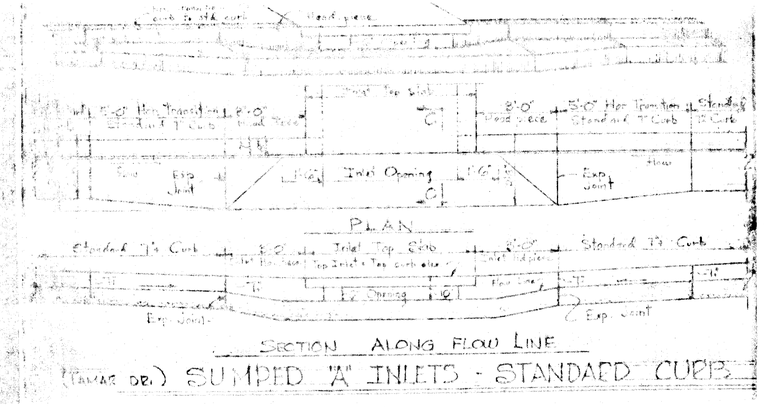
TYPE B MANHOLE

No Scale

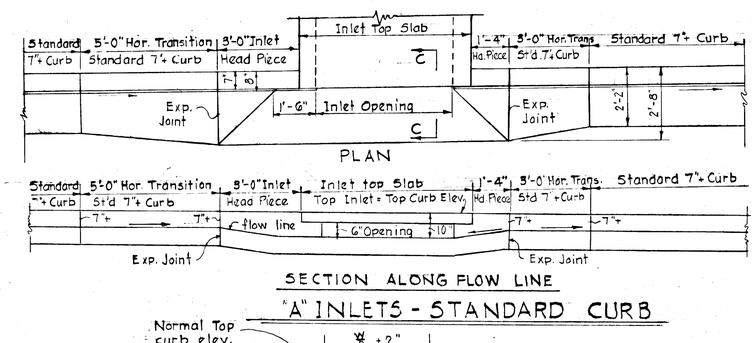




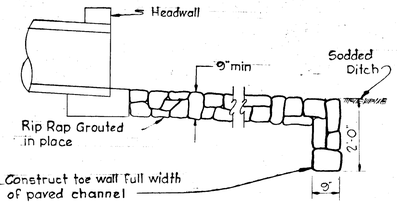
"A" INLETS - MOUNTABLE CURB



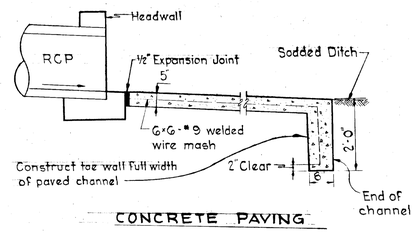
(REVISED DRAWING) ## SUMPED "A" INLETS - STANDARD CURB



"A" INLETS - STANDARD CURB



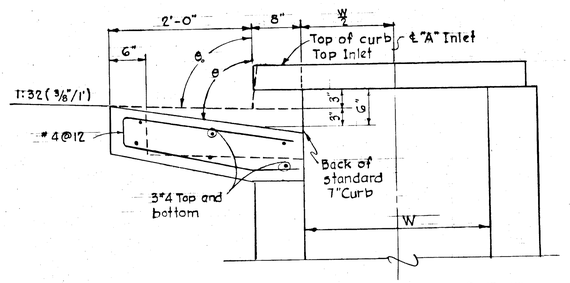
RIP RAP PAVING



CONCRETE PAVING

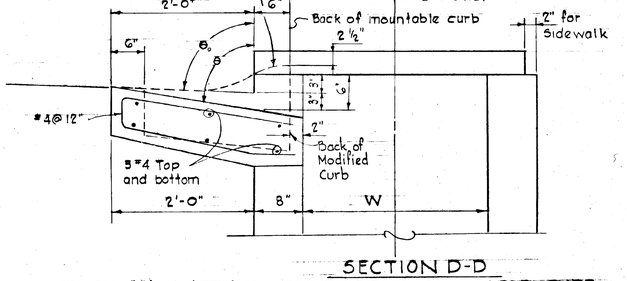
TYPICAL OUTLET PAVING

Scale: ½"=1'-0



SECTION C-C

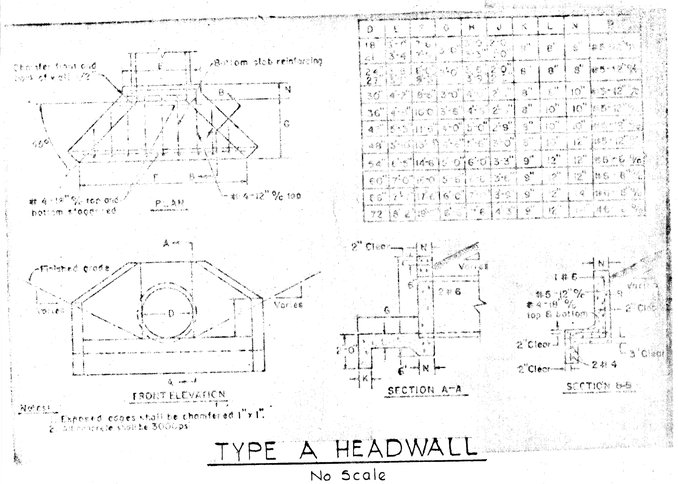
"A" INLET - STANDARD CURB



SECTION D-D

"A" INLET - MOUNTABLE CURB

Note: For "A" inlet dimensions and structural details, see standard Howard County Drawing G4-A page 119-A



TYPE A HEADWALL

No Scale

DEPARTMENT OF PUBLIC WORKS
B. H. Mebrand 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

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COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
STORM DRAIN DETAILS

SCALE: As Shown DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

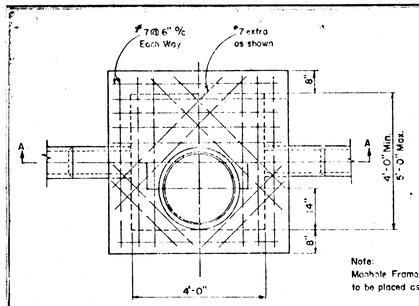
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972
JWCJ

W.O. GB3G-2B
#61

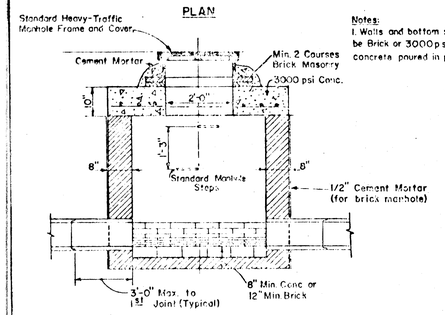
5/25/72

F-72-85C



PLAN

Note:
Manhole Frame and Cover to be placed as shown.

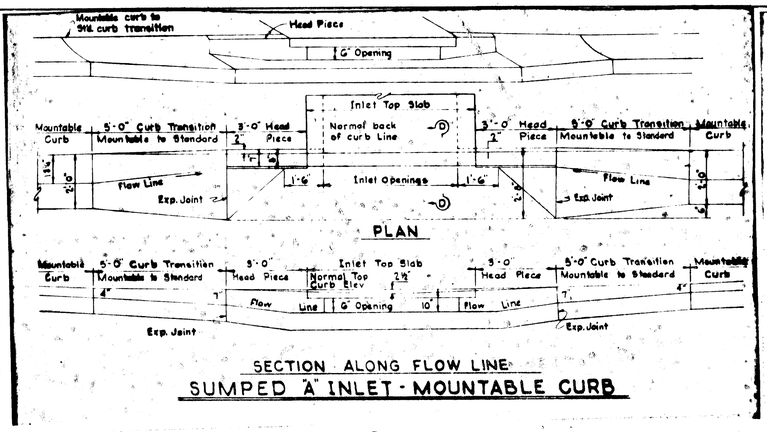


Notes:
1. Walls and bottom shall be Brick or 3000 p.s.i. concrete poured in place.

SECTION A-A

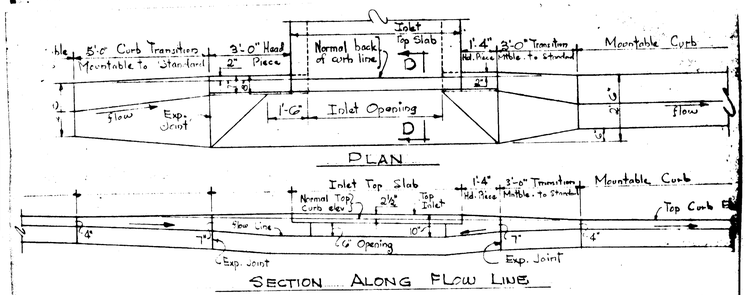
TYPE B MANHOLE

No Scale



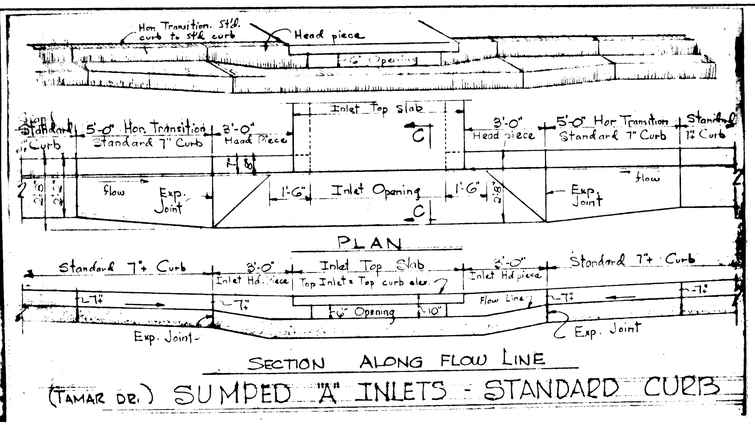
SECTION ALONG FLOW LINE

SUMPED "A" INLET - MOUNTABLE CURB



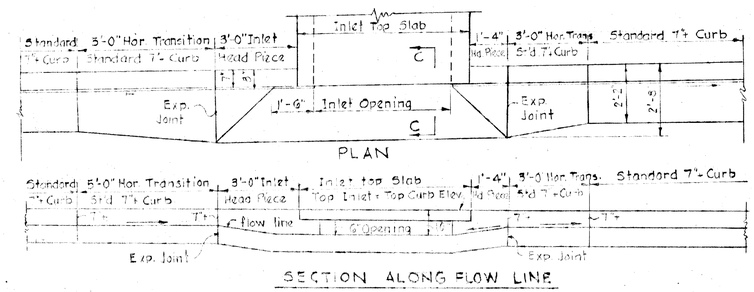
SECTION ALONG FLOW LINE

"A" INLETS - MOUNTABLE CURB



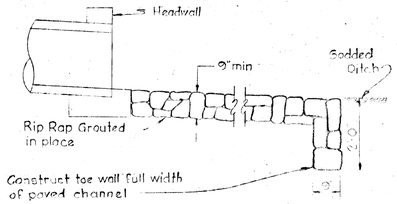
SECTION ALONG FLOW LINE

(TAMAR DR.) SUMPED "A" INLETS - STANDARD CURB

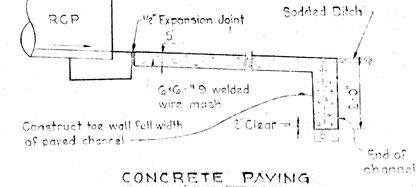


SECTION ALONG FLOW LINE

"A" INLETS - STANDARD CURB



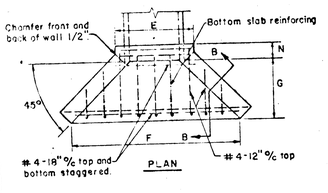
RIP RAP PAVING



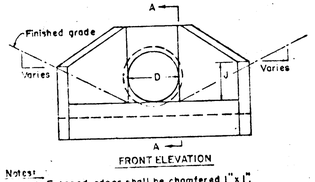
CONCRETE PAVING

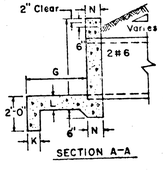
TYPICAL OUTLET PAVING

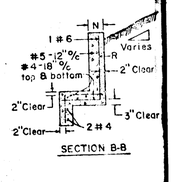
Scale: ¼"=1'-0"



D	E	F	G	H	J	K	L	N	R
18" 21"	3'-0" 3'-4"	7'-8" 7'-9"	5'-0"	3'-0" 3'-3"	2'-0" 2'-0"	8"	8"	8"	#5-12" c/c
24" 27"	3'-8" 3'-11"	8'-0" 8'-3"	5'-0"	3'-6" 3'-9"	2'-0" 2'-0"	8"	8"	8"	#5-12" c/c
30"	4'-2"	8'-6"	5'-0"	4'-0"	2'-1"	8"	9"	10"	#5-12" c/c
36"	4'-8"	10'-0"	5'-6"	4'-6"	2'-3"	8"	10"	10"	#5-12" c/c
42"	5'-3"	11'-6"	6'-0"	5'-0"	2'-9"	8"	10"	10"	#5-12" c/c
48"	5'-10"	13'-0"	6'-6"	5'-6"	3'-0"	8"	10"	12"	#5-12" c/c
54"	6'-5"	14'-6"	7'-0"	6'-0"	3'-3"	9"	12"	12"	#6-8" c/c
60"	7'-0"	16'-0"	7'-6"	6'-6"	3'-6"	9"	12"	12"	#6-8" c/c
66"	7'-7"	17'-6"	8'-0"	7'-0"	3'-9"	9"	12"	14"	#6-8" c/c
72"	8'-2"	19'-0"	8'-6"	7'-6"	4'-3"	9"	12"	14"	#6-8" c/c



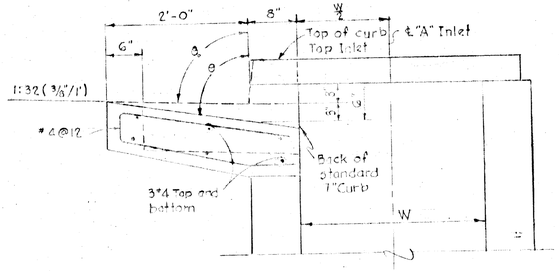




Notes:
1. Exposed edges shall be chamfered 1"x1".
2. All concrete shall be 3000psi

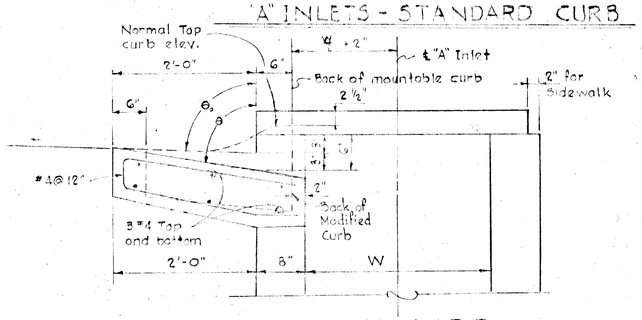
TYPE A HEADWALL

No Scale



SECTION C-C.

"A" INLET - STANDARD CURB



SECTION D-D

"A" INLET - MOUNTABLE CURB

Note: For "A" inlet dimensions and structural details, see standard Howard County Drawing G4-A page 119-A

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE
OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING — DATE

B. H. Mohland 5/30/72

MAY 26 1972

jncf

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
STORM DRAIN DETAILS

SCALE: As Shown — DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 00330-2B

5/26/72

SHEET 46 OF 53

F-72-86 C

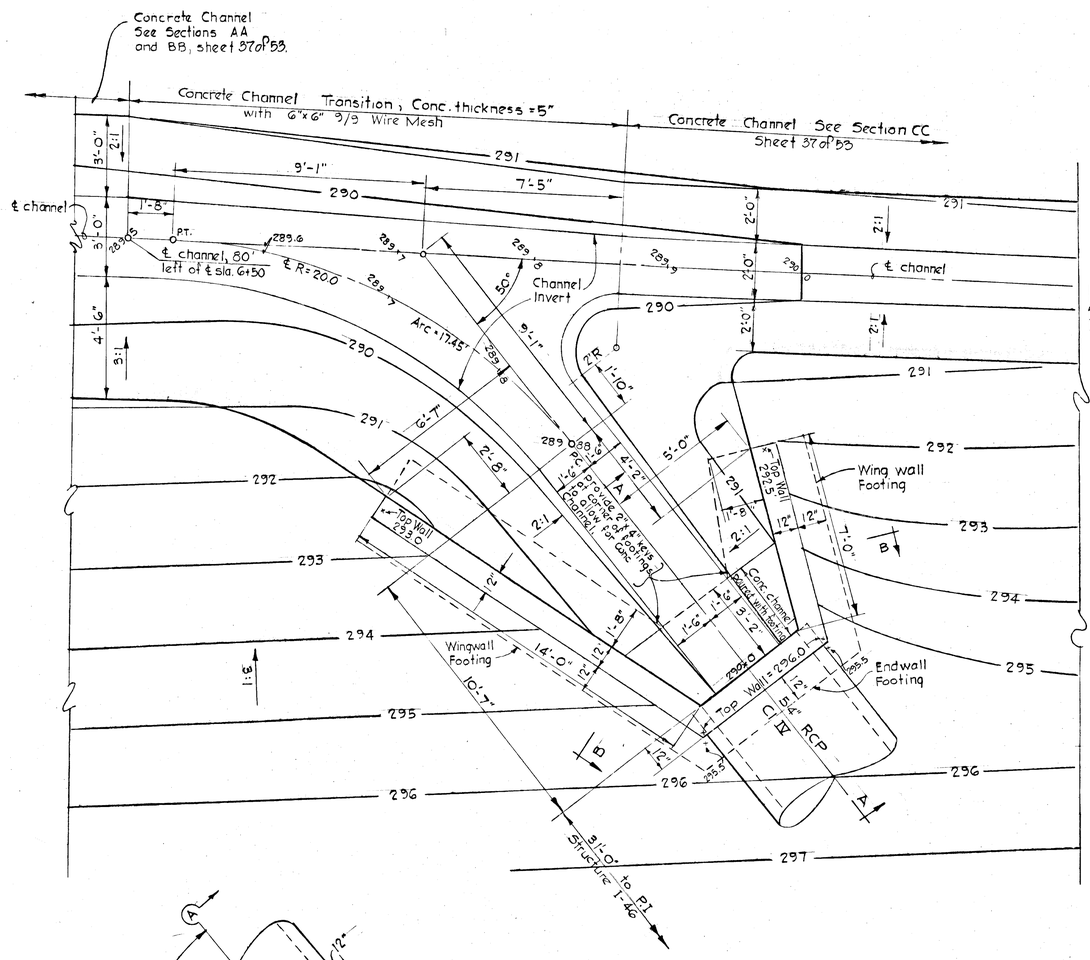
DEPARTMENT OF PUBLIC WORKS

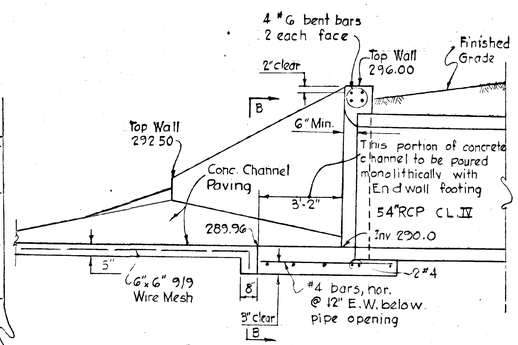
D. K. Mikkelsen 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

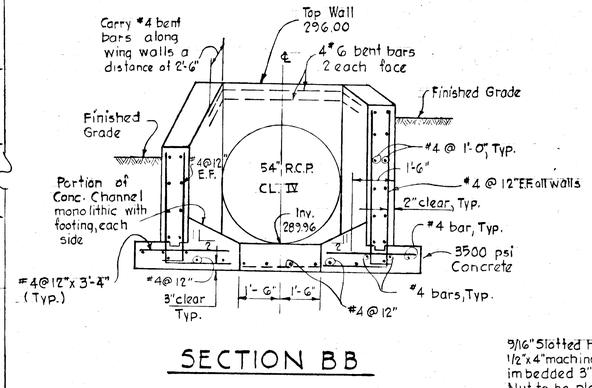
OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE



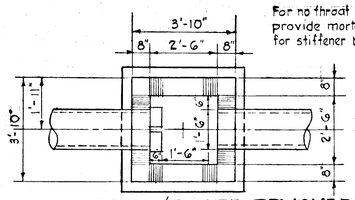


SECTION AA

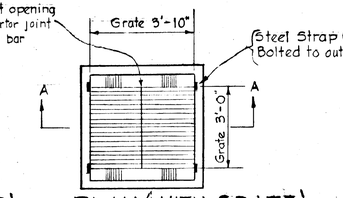


SECTION BB

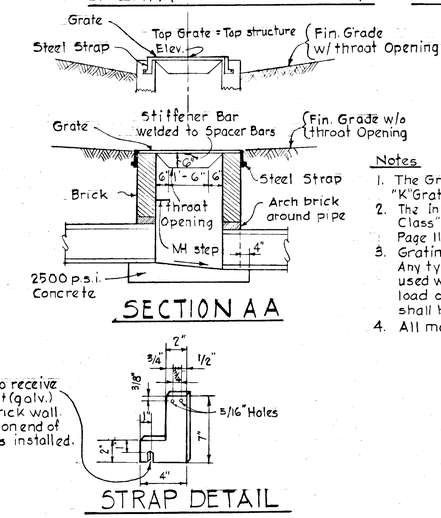
Grate size 16"x 36" (one piece)



PLAN (GRATE REMOVED)



PLAN (WITH GRATE)



SECTION AA

Notes

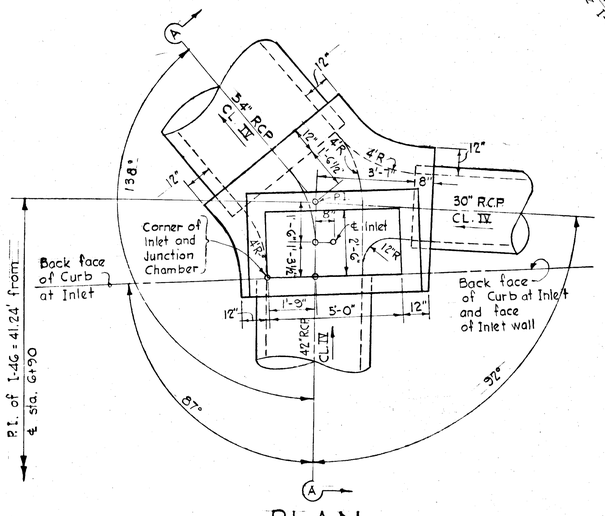
1. The Grating shown is similar to M.S.R.C. standard "K" Grate.
2. The Inlet shown is similar to Howard County Standard Class "C" Type D inlet, for details see Drawing 64-C Page 119-C of this Standard.
3. Gratings are subject to approval for each job. Any type of substantial transverse bars may be used which will support a minimum uniform load of 150 lbs/sq. ft. The transverse bars shall be held rigid by spacer bars.
4. All material to be hot dipped galvanized.

9/16" Slotted hole to receive 1/2"x 4" machine bolt (galv.) imbedded 3" in brick wall. Nut to be placed on end of bolt after grate is installed.

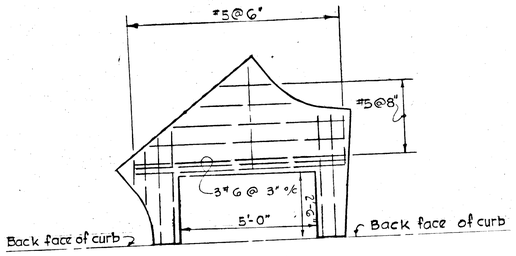
STRAP DETAIL

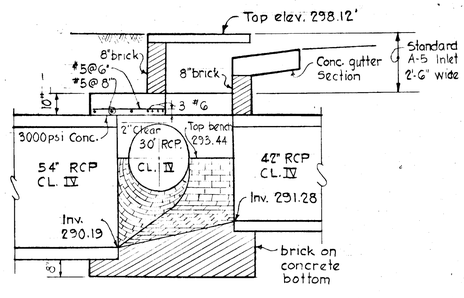
MODIFIED TYPE "D" CLASS "C" INLET

Scale : 3/8" = 1'-0



PLAN





SECTION AA

ENDWALL 5-8 and EXIT CHANNEL

Scale 3/8" = 1'-0"

PLAN CONCRETE SLAB

WITH "A-5" INLET REMOVED

INLET JUNCTION CHAMBER I-46

Scale 3/8" = 1'-0"

APPROVED

BUREAU OF LAND DEVELOPMENT

ENGINEERING

May 5, 1972

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA

VILLAGE OF OWEN BROWN

SECTION 1, AREA 1

PROJECT TITLE

STORM DRAIN DETAILS

SCALE : As Shown Date

WHITMAN, REQUARDT & ASSOCIATES

ENGINEERS

BALTIMORE, MARYLAND 21202

Kenneth A. McCord

KENNETH A. McCORD

Registered Engineer

No. 1374

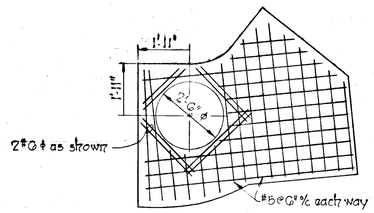
W.O. 653G-2D

#161

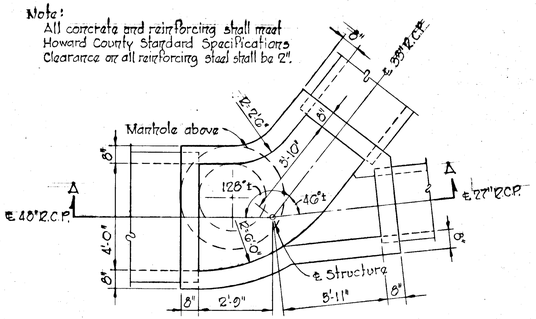
5/25/72

SHEET 47 OF 53

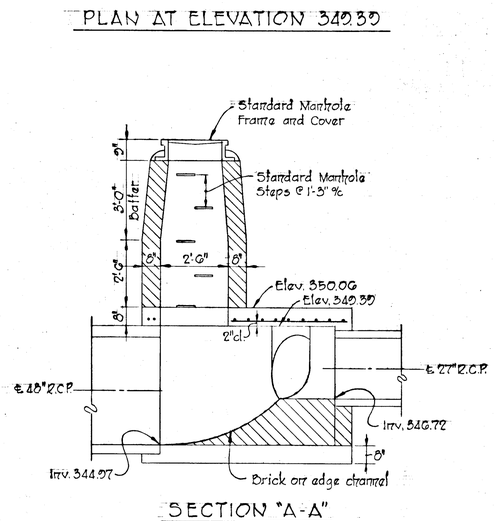
F-72-85C



SLAB DETAIL

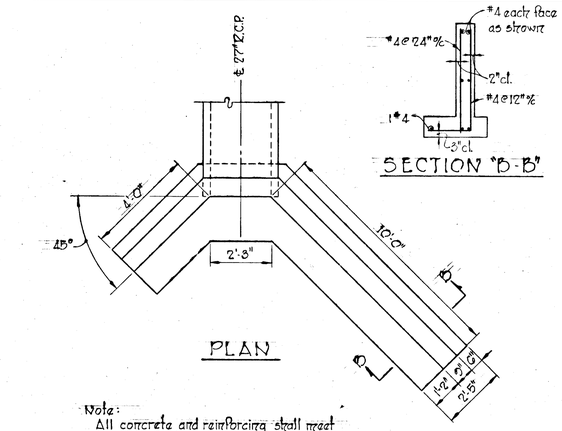


PLAN AT ELEVATION 349.30



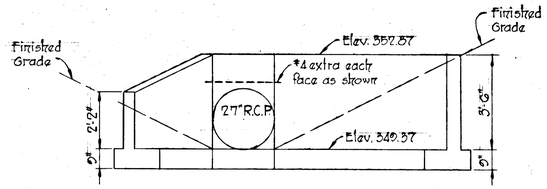
SECTION "A-A"

DETAIL
JUNCTION CHAMBER MH 15
Scale : 3/8"=1'-0"



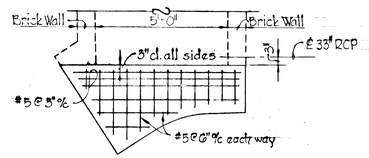
PLAN

Note:
All concrete and reinforcing shall meet Howard County Standard Specifications.
All exposed edges to be chamfered 1"×1".

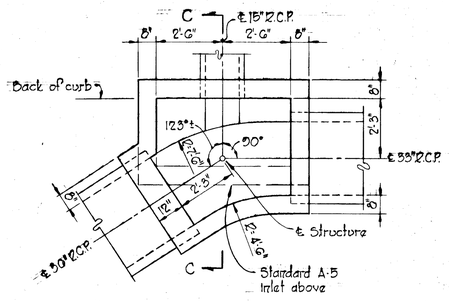


FRONT ELEVATION

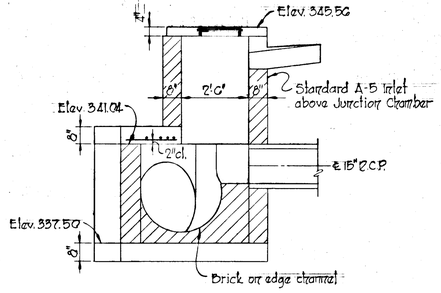
DETAIL
HEADWALL S-18
Scale : 3/8"=1'-0"



SLAB DETAIL



PLAN AT ELEVATION 341.04



SECTION "C-C"

DETAIL
INLET JUNCTION CHAMBER I-1
Scale : 3/8"=1'-0"

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
DATE: MAY 26 1972

DEPARTMENT OF PUBLIC WORKS
D. H. Weikund 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING
CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
STORM DRAIN DETAILS

Scale : As Shown Date :

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

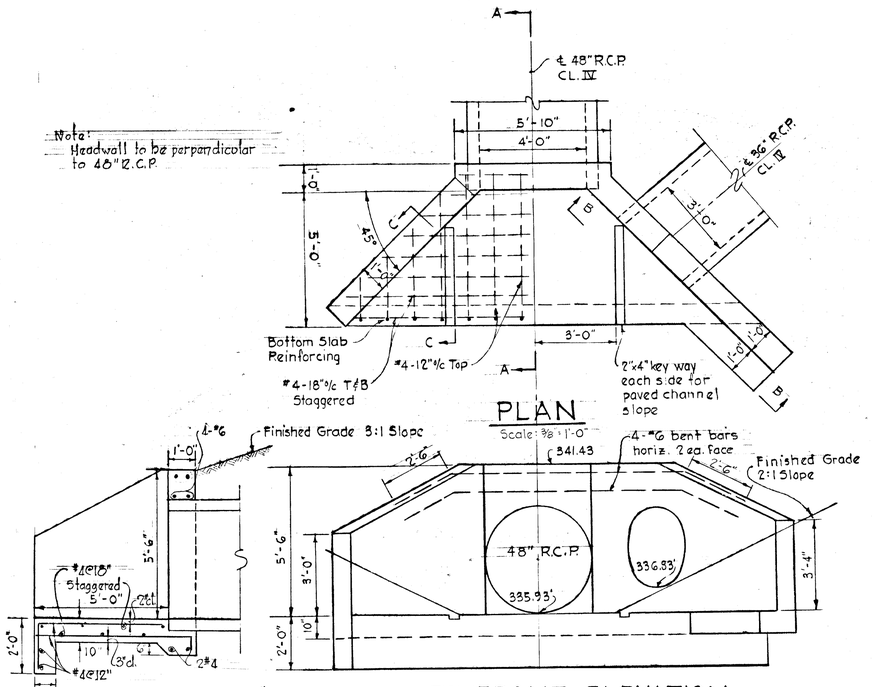
Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72

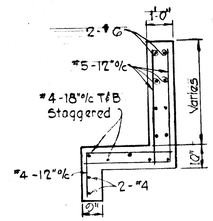
SHEET 48 OF 53

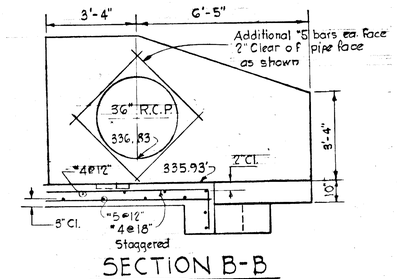
F-72-85C

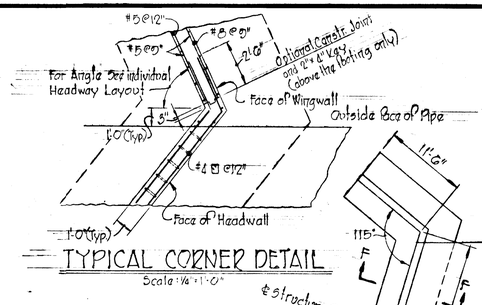


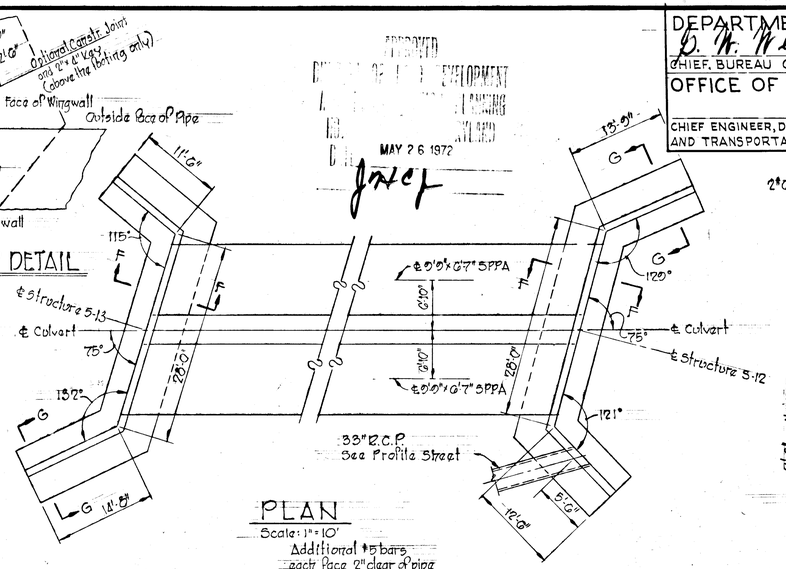
SPECIAL ENDWALL S-1

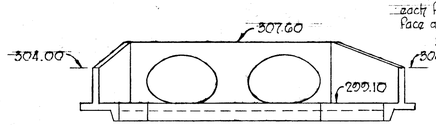
Scale 3/8" = 1'-0"

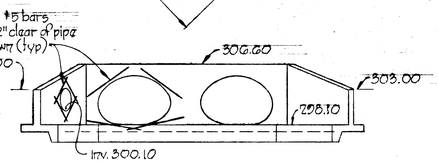






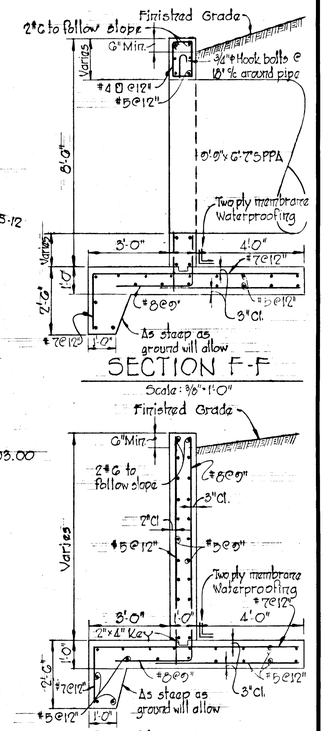






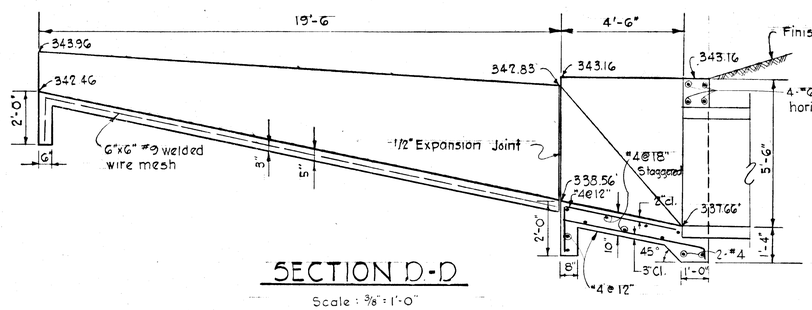
ENDWALL S-12 & HEADWALL S-13

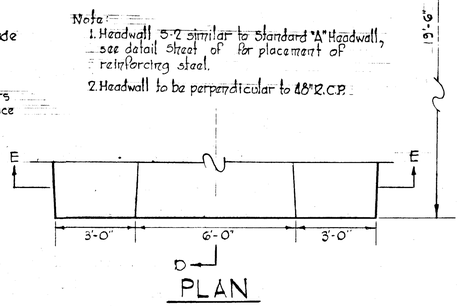
Scale: As Shown

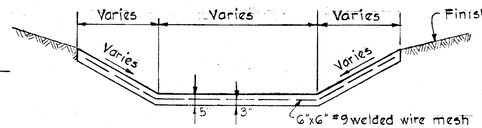


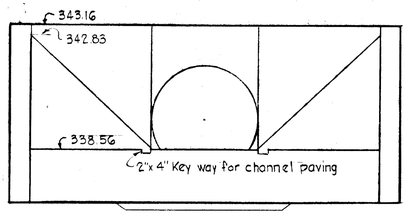
1. Specifications: The latest edition of the Maryland State Roads Commissions Specifications.
2. Maximum soil bearing pressure = 2,100 p.s.i.
3. All concrete shall have a minimum 28 day strength of 3500 p.s.i.
4. Reinforced concrete is designed and shall be detailed and constructed in accordance with ACI Standard 318-71
5. Reinforcing bars shall conform to A.S.T.M. designation A 615-70 Grade 40.
6. All reinforcing bars shall be embedded and/or lapped as follows:
   - #5 : 29"
   - #6 : 31"
   - #7 : 42"
   - #8 : 55"

   Unless otherwise noted.
7. Unless otherwise noted on the drawing, concrete cover on reinforcing bars shall be:
   a. Unformed concrete top and bottom of slabs = 3"
   b. Formed walls = 2"
8. Exposed edges of concrete shall be chamferred 1" except as noted.
9. At openings in walls replace each interrupted reinforcement bar with two bars (1- each side opening) or bend steel around opening.
10. A minimum of 3 days shall elapse between adjacent concrete pours of walls or of footing.









DEPARTMENT OF PUBLIC WORKS
D. W. Weiland 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

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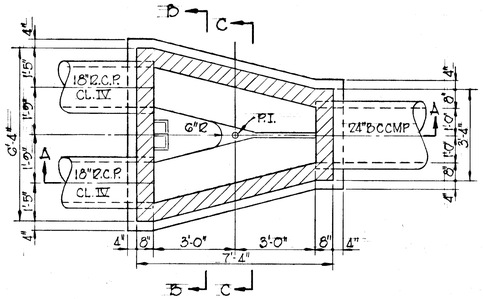
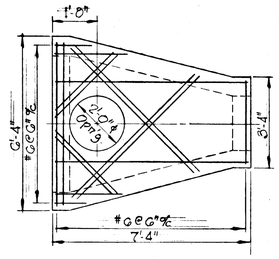
SHEET 49 of 53

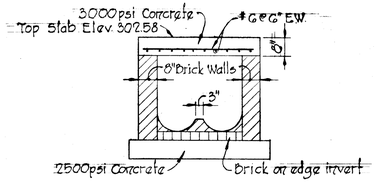
F-72-85



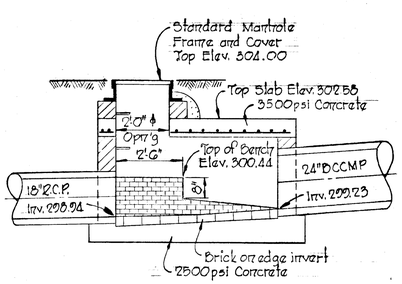
PLAN BELOW CONCRETE SLAB



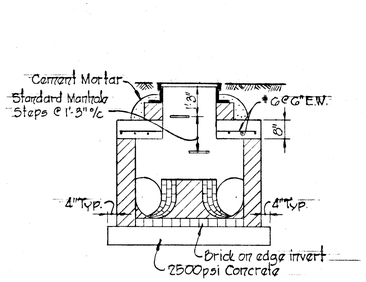
TOP SLAB PLAN



SECTION C-C



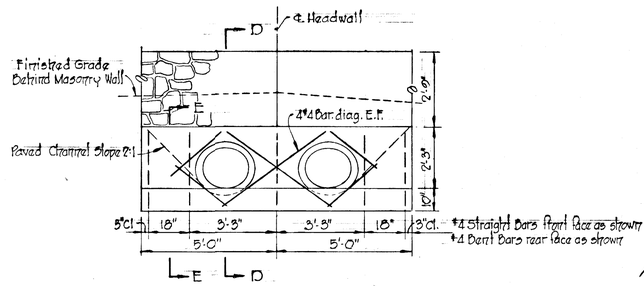
SECTION A-A



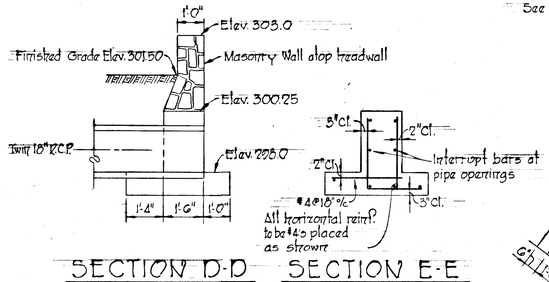
SECTION B-B

MANHOLE MH1

Scale: 3/8" = 1'-0"



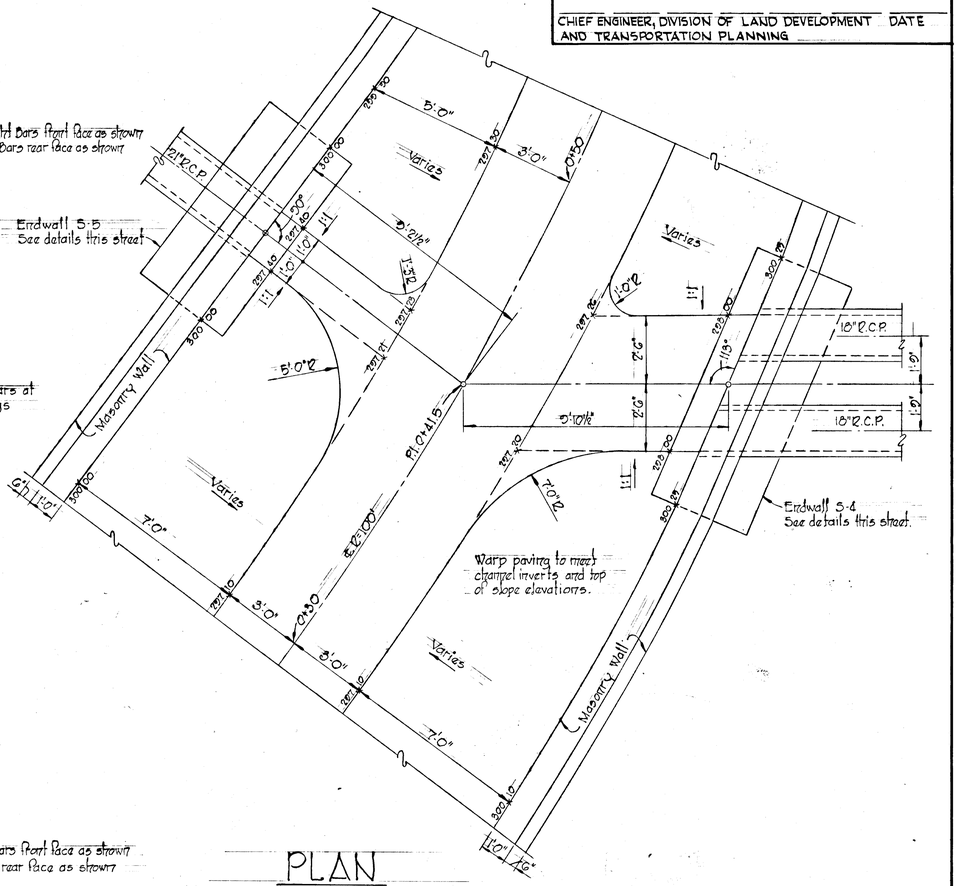
FRONT ELEVATION



SECTION D-D SECTION E-E

ENDWALL S-4

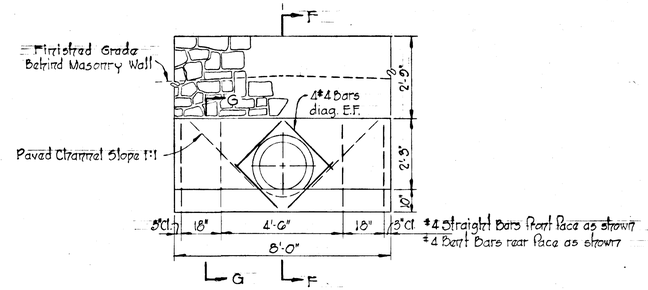
Scale: 3/8" = 1'-0"



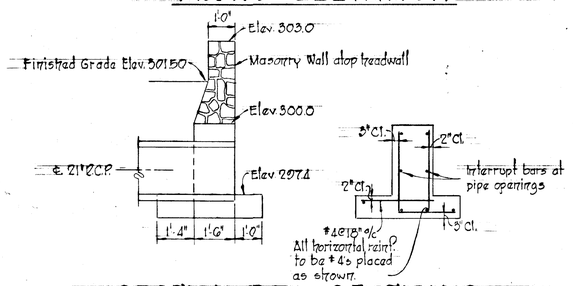
PLAN

ENDWALLS S-4 & S-5

Scale: 3/8" = 1'-0"



FRONT ELEVATION



SECTION F-F SECTION G-G

ENDWALL S-5

Scale: 3/8" = 1'-0"

APPROVED
DIVISION OF LAND DEVELOPMENT
AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAY 26 1972

DEPARTMENT OF PUBLIC WORKS
D. M. Wiseland 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

Rev. Date	Rev. No.	Revision Description

COLUMBIA

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
STORM DRAIN DETAILS

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. 6536-2B
#61

5/25/72

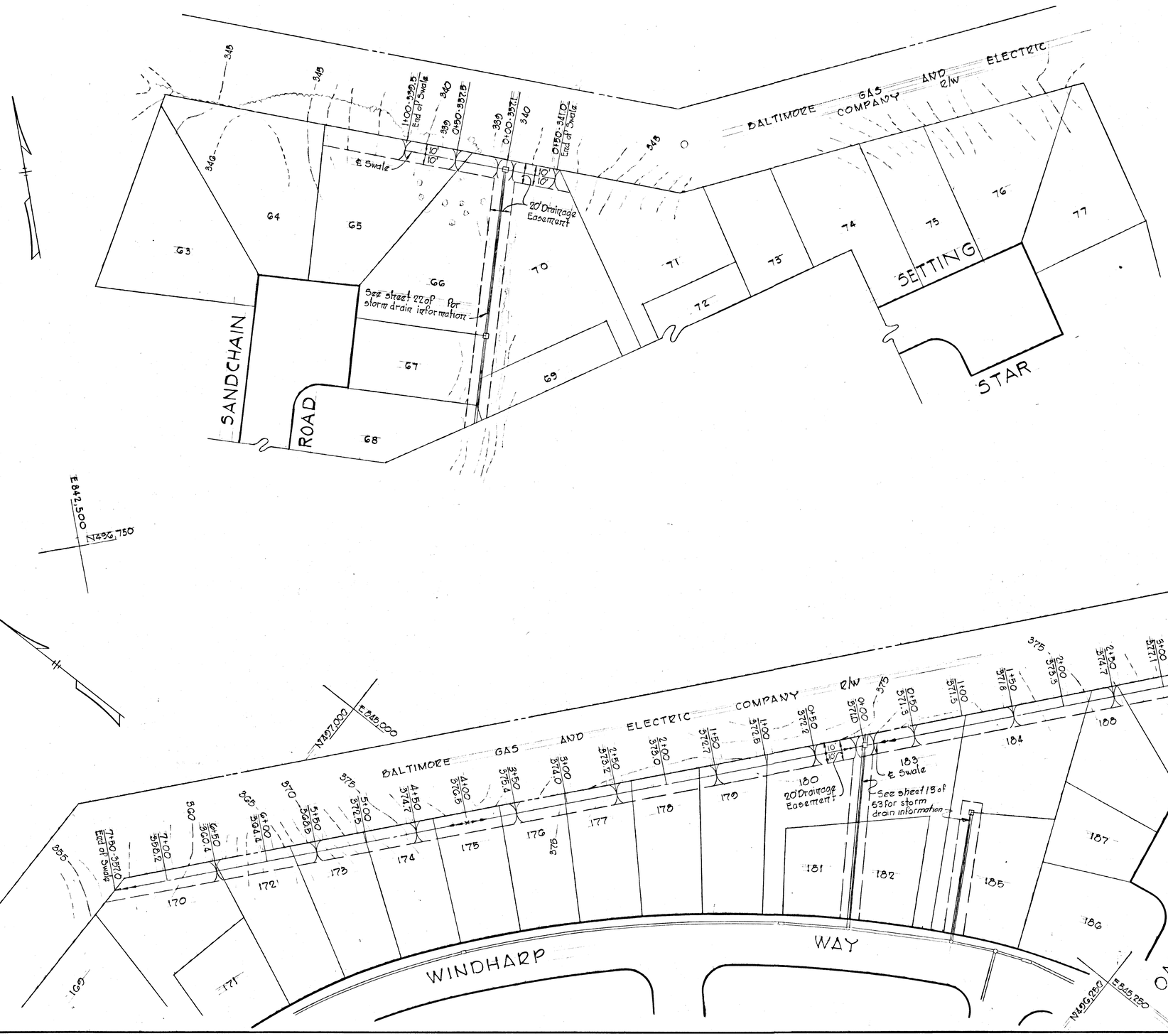
SHEET 50 OF 53

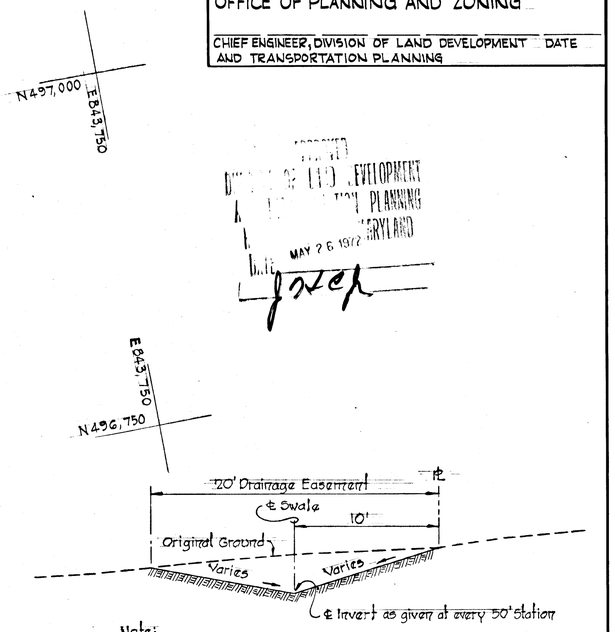
F-72-XSC

DEPARTMENT OF PUBLIC WORKS
D. N. Mereland 5/30/72
CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE





Note:
1. Full width of swale to be sodded.
2. Side slopes to extend from ℄ invert to Original ground at limits of drainage easement.

TYPICAL SWALE CROSS-SECTION
NO SCALE

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
DRAINAGE SWALES

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. GB3C-2B
#61

5/25/72

SHEET 51 OF 53

F-72-85C

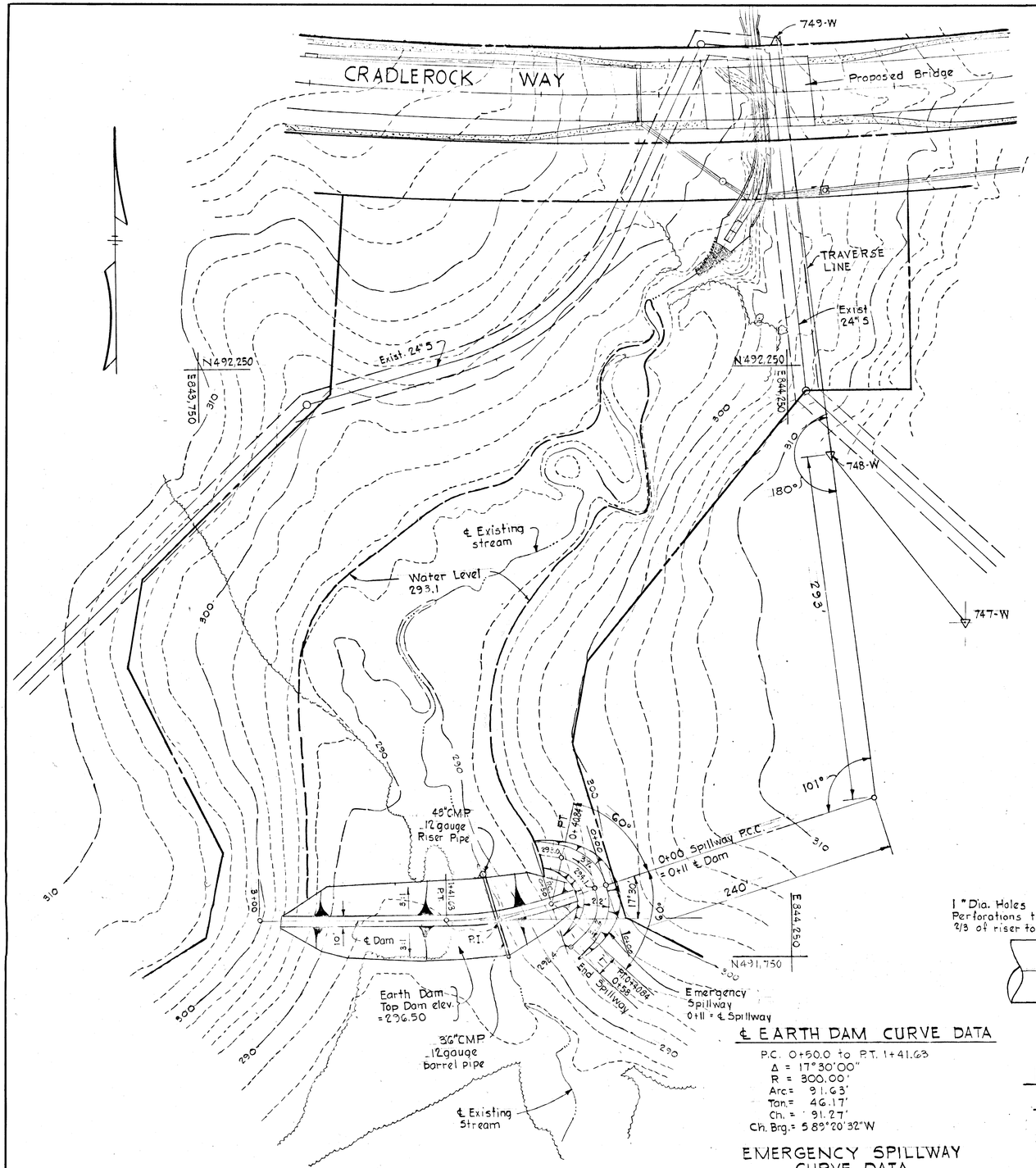
DEPARTMENT OF PUBLIC WORKS

J. M. Mikkelsen 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

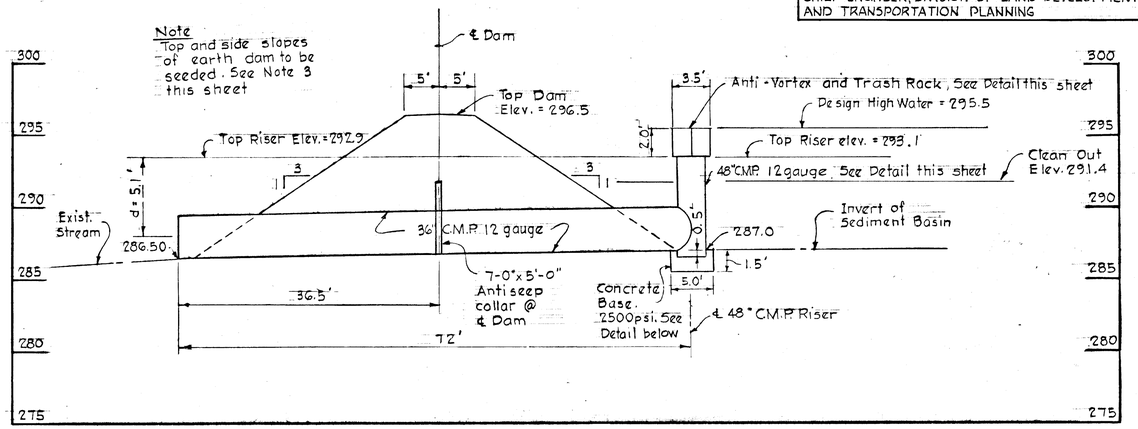


℄ EARTH DAM CURVE DATA

P.C. 0+50.0 to P.T. 1+41.63
Δ = 17°30'00"
R = 300.00'
Arc = 91.63'
Tan. = 46.17'
Ch. = 91.27'
Ch. Brg. = S 89°20'32" W

EMERGENCY SPILLWAY CURVE DATA

Δ = 60°00'00" Tan = 22.52'
R = 39.00' Ch = 39.00'
Arc = 40.84 Ch. Brg = S 11°50'32" E



SECTION - EARTH DAM

No Scale

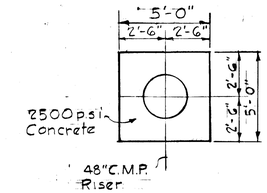
DETAIL ANTI-VORTEX AND TRASH RACK

No Scale

NOTES

1. All sediment controls must be constructed prior to any grading.
2. No temporary sediment control structure may be removed or destroyed without approval of the Howard Soil Conservation District.
3. Area to be seeded as shown shall use a seed mixture as follow: annual rye grass (20%), kentucky blue grass (20%) and kentucky "31" fescue (60%) at the rate of 200 #/A. Sow with mechanical spreader rake, minimum of two (2) passes with "York Rake" cover and compact with cultipacker. Surface preparation to include ground limestone over topsoil surface area at the rate of 1 1/4 T/A (60 #/1000 ft²) commercial fertilizer (5-10-10) at the rate of 3/4 T/A (35 #/1000 ft²) and superphosphate at the rate of 600 #/A (15 #/1000 ft²).
4. 3200 cubic yards of suitable material is required for Earth Dam embankment.

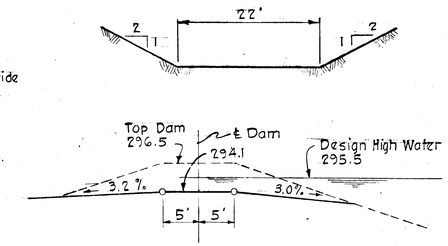
APPROVED
DIVISION OF LAND DEVELOPMENT AND PLANNING
STATE OF MARYLAND
MAY 26 1972



RISER PIPE BASE

Scale = 1/4" = 1'-0"

Note:
Entire length of spillway to be seeded 22' bottom and 2:1 side slopes. See note 3 this sheet



SECTIONS - EMERGENCY SPILLWAY

No Scale

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1 AREA 1

PROJECT TITLE
SEDIMENT CONTROL POND # 1

SCALE: As Shown DATE:

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. GB3G-2D
#61

5/25/72

SHEET 52 OF 53

F-72-85C

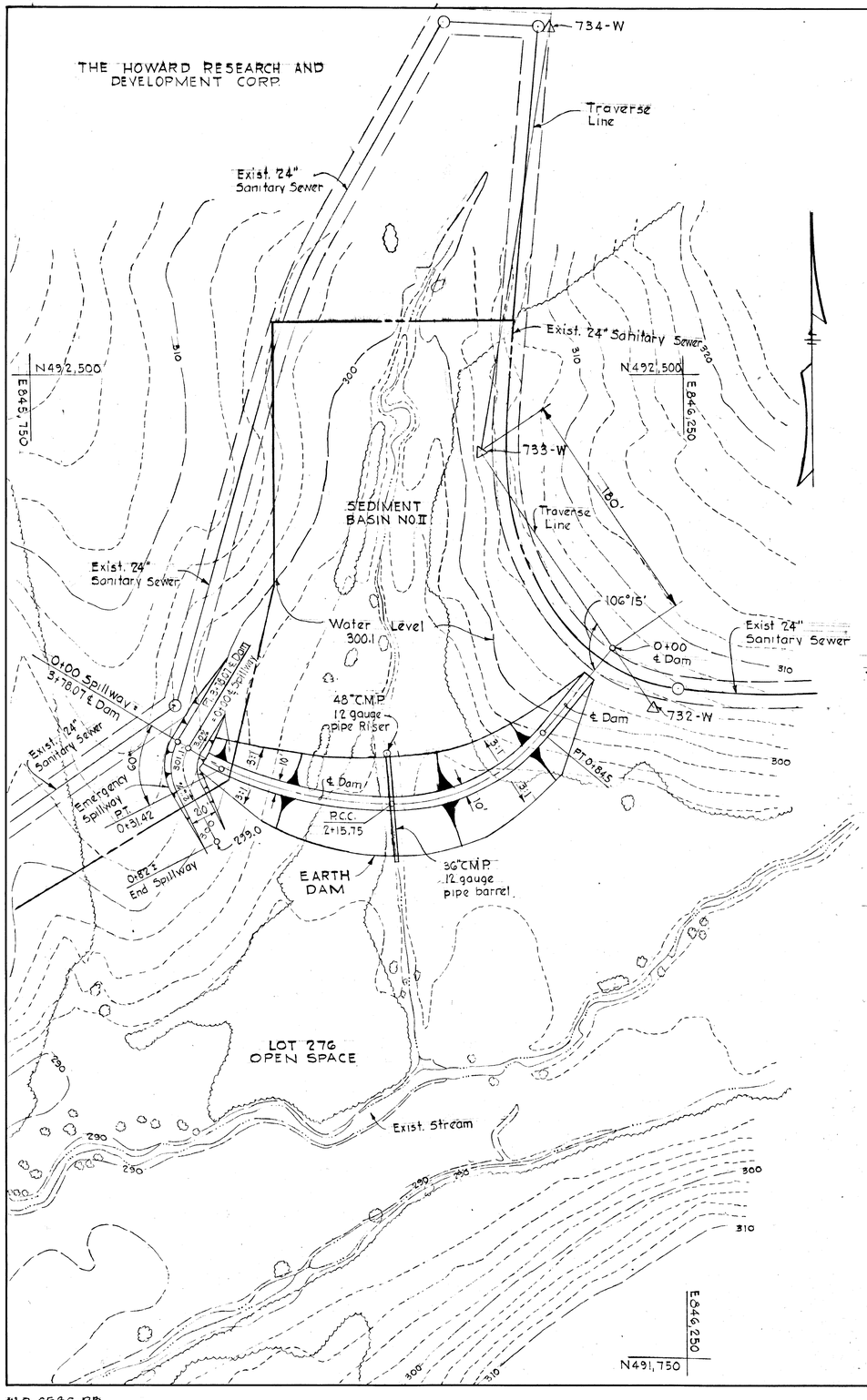
DEPARTMENT OF PUBLIC WORKS

D. M. Markland 5/30/72

CHIEF, BUREAU OF HIGHWAYS DATE

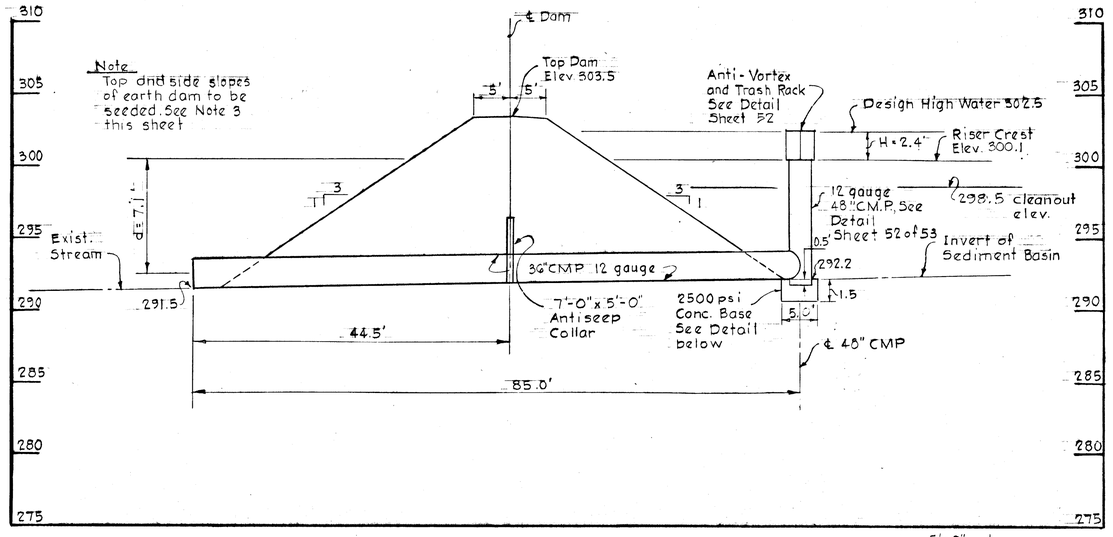
OFFICE OF PLANNING AND ZONING

CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE



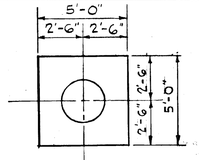
NOTES

1. All sediment controls must be constructed prior to any grading.
2. No temporary sediment control structure may be removed or destroyed without approval of the Howard Soil Conservation District.
3. Area to be seeded as shown shall use a seed mixture as follow: annual rye grass (20%), kentucky blue grass (20%) and kentucky 31 fescue (60%) at the rate of 200#/A. Sow with mechanical spreader rake, minimum of two (2) passes with "York Rake", cover and compact with cultipacker. Surface preparation to include ground limestone over topsoil surface area at the rate of 1 1/4 T/A (60#/1000 ft) commercial fertilizer (5-10-10) at the rate of 3/4 T/A (35#/1000 ft) and super phosphate at the rate of 600#/A (15#/1000).
4. 5100 cubic yards of suitable material is required for Earth Dam Enbankment.



SECTION EARTH DAM

Scale = Hor. 1"=10'
Ver. 1"= 5'



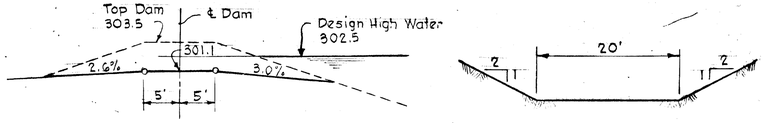
℄ 48"C.M.P. Riser

RISER PIPE BASE

Scale: 1/4" = 1'-0"

APPROVED
DEPT. OF LAND DEVELOPMENT
AND PLANNING
BALTIMORE COUNTY, MARYLAND
DATE MAY 26 1972

Note:
Entire length of spillway to be seeded, 20' bottom and 2:1 side slopes. See note 3 this sheet



SECTIONS - EMERGENCY SPILLWAY

No Scale

℄ EARTH DAM CURVE DATA

P.C.C. 2+15.75 to P.T. 3+78.07
Δ = 31° 00' 00"
R = 300.00'
Arc.= 162.32'
Tan.= 83.20'
Ch.= 160.34'
Ch.Brg = N 74° 30' 01" W

P.C. 0+84.5 to P.C.C. 2+15.75
Δ = 50° 08' 06"
R = 150.00'
Arc.= 131.25'
Tan.= 70.16
Ch = 127.11
Ch.Brg.= S 64° 55' 56" W

EMERGENCY SPILLWAY CURVE DATA

Δ = 60° 00' 00"
R = 30.00'
Arc.= 31.42'
Tan.= 17.32'
Ch.= 30.00'
Ch. Brg.= N 00° 59' 59" E

Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.

PROJECT AREA
VILLAGE OF OWEN BROWN
SECTION 1, AREA 1

PROJECT TITLE
SEDIMENT CONTROL POND #2

SCALE As Shown DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

Kenneth A. McCord
KENNETH A. McCORD
Registered Engineer
No. 1974

W.O. GB3G-2B
#61

5/25/72 SHEET 53 OF 53

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